



Oxyrhopus petolarius, Yotoco, Reserva forestal, 2012, Fdo Castro.



Conservation status of the herpetofauna, protected areas, and current problems in Valle del Cauca, Colombia

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Abstract.—In this study, we present an analysis of the conservation status of amphibian and reptile species by associating the natural protected areas and municipalities with the distribution of richness in Valle del Cauca. We establish the percentage of species of amphibians and reptiles in each of the IUCN (International Union for Conservation of Nature) threat categories and assign local conservation categories to all species, construct distribution maps for the records of species in relation to their threat status, and analyze the endemic and total number of species in each of the protected areas. We found that nearly 50% of the species in the Valle del Cauca are under some degree of risk or threat, that the largest percentage are in the Vulnerable (VU) category, whereas 37% of the fauna is not threatened (Least Concern [LC] and Near Threatened [NT]), and 13% is categorized as Data Deficient (DD). Although the distribution of species is scattered throughout the territory, patterns are maintained within the various regions, with areas of greater richness found in the Pacific region and the cordilleras; the municipalities with the largest number of species under some level of threat are Buenaventura, Darién, El Cairo, Dagua, Cali, La Cumbre, and Yotoco. The types of protected areas with the largest number of species are the Reservas Forestales Protectoras Nacionales (RFPN) 37%, followed by the Parques Nacionales Naturales (PNN) 18%, the Reservas Forestales Protectoras Regionales (RFPR) 10%, and the Parques Naturales Regionales (PNR) 7.5%; 17% (~ 57 spp.) of the species in the Valle del Cauca have not been recorded in any of the protected areas, and more than 65% of these are under some type of threat. We consider this study a starting point for evaluating conservation priorities for the herpetofauna of Valle del Cauca.

Key words. Amphibians, reptiles, distribution, IUCN, population declines, threats

Resumen.—En este trabajo presentamos un análisis del estado de conservación de las especies de anfibios y reptiles relacionando las áreas naturales protegidas y los municipios con la distribución de riqueza en Valle del Cauca. Establecemos los porcentajes de especies de anfibios y reptiles en cada categoría de amenaza establecida por UICN (Unión Internacional para la Conservación de la Naturaleza) y asignamos categorías de conservación local a todas las especies, se realizó mapas de distribución de los registros de las especies en relación a los estados de amenaza, y analizamos el número de especies totales y endémicas en cada área protegida. Encontramos que cerca del 50% de las especies en el Valle del Cauca presentan algún grado de riesgo o amenaza, que la mayor proporción se encuentra en la categoría vulnerable (VU), mientras que el 37% de la herpetofauna no se encuentra en riesgo (preocupación menor [LC] y casi amenazado [NT]) y el 13% está categorizada en datos deficientes (DD). Aunque la distribución es diferencial a lo largo del territorio, se conservan patrones a lo largo de las regiones, con sitios de mayor riqueza en la región pacífica y las cordilleras; y los municipios con mayor número de especies con algún grado de amenaza son Buenaventura, Darién, El Cairo, Dagua, Cali, La Cumbre y Yotoco. Los tipos de áreas protegidas con mayor número de especies son las Reservas Forestales Protectoras Nacionales (RFPN) 37%, seguidas por los Parques Nacionales Naturales (PNN) 18%, Reservas Forestales Protectoras Regionales (RFPR) 10%, y los Parques Naturales Regionales (PNR) 7.5%; el 17% (~ 57 spp.) de las especies en el Valle del Cauca no han sido registradas en ninguna de las áreas protegidas, y más del 65% de estas están bajo algún tipo de amenaza. Consideramos este estudio un punto de partida para evaluar prioridades de conservación para la herpetofauna de Valle del Cauca.

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Palabras claves. Anfibios, reptiles, distribución, UICN, declive poblacional, amenazas

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Introduction

Many populations of amphibians and reptiles are in decline (Mendelson et al. 2006; Böhm et al. 2013), primarily as a result of habitat loss, climate change, introduced species, diseases, and illegal trafficking (Young et al. 2001; Stuart et al. 2004; Mendelson et al. 2006; Wake 2007; Rovito et al. 2009; Böhm et al. 2013). Estimates indicate that 15–36% of the world's species of reptiles are threatened (Böhm et al. 2013), and according to Stuart et al. (2004) 22.5% of the species evaluated by IUCN lacked sufficient information to evaluate their status. Although the IUCN standardized the use of categories that can be applied to any taxon and has attempted to catalogue the majority of species (IUCN 2012), many species still have not been evaluated or lack the necessary information for conducting an assessment; in the case of reptiles, 59% of the species have not been assessed.

In Colombia, in addition to the above mention factors that threaten populations of amphibians and reptiles (Rueda 1999; Ruiz and Rueda-A 2008; Velásquez et al. 2008; Isaacs and Urbina 2011; Urbina 2011; Urbina et al. 2011; Vargas and Amezquita 2013), the social problem associated with the planting and eradication of illicit crops threatens the fauna because of the destruction of primary forests and the use of pesticides such as Glifosato (Arroyo and Lynch 2009; Brain and Solomon 2009). A mining crisis also has developed in the country, where mining permits are granted to people for economic purposes while the long-term impact on the environment caused by these activities is ignored (Mancera and Alvarez 2006; UPME 2007; Hernández et al. 2013).

In response to these problems, early in the 1930s “áreas naturales protegidas” (= natural protected areas) were designated in the country, which led to the formation of “zonas forestales protectoras” (= protected forest areas) in the department (dpto= a territorial division in Colombia that has autonomy in the administration of regional issues, planning, and the promotion of economic and social development within its territory under the terms established by the Constitution) of Valle del Cauca (decree 1393/40). Regulations for determining the exact management categories that competent authorities at dif-

ferent levels can assign to protected areas, however, still have not been implemented in the country (Vásquez and Serrano 2009). Currently, 197 reserves of all types exist in the Valle del Cauca; three natural national parks are the most important because of their large size and location in areas of high herpetofaunal diversity, in the dpto and in the country—the “Cordillera Occidental” (= the Western Cordillera) and the “Región Pacífica” (= Pacific Region) (Cardona et al. 2013); environmental problems, however, are present in these areas, as their biological patrimony has not been fully elucidated (Patiño 2010).

Valle del Cauca is one of the dptos with the greatest amount of herpetofaunal species richness (333 species), which represents 24% of the amphibian and 25% of the reptile species recorded from the country (Cardona et al. 2013). We are unaware, however, of the number of threatened species in the dptos, or plans for their conservation. In a red book of amphibians, Castro-H and Bolívar-G (2010) included 68 species under some type of threat, and along with an action plan for the conservation of amphibians in Valle de Cauca provided by Corredor et al. (2010); these publications are considered pioneer efforts in conservation; in general, research programs usually are developed separately and independently.

The objective of this paper is to present an analysis of the conservation status of the species of amphibians and reptiles by associating the natural protected areas and municipalities with the distribution of richness in Valle del Cauca, as a starting point for evaluating conservation priorities for the herpetofauna of this region.

Materials and Methods

Study area

Valle del Cauca is a dpto in southwestern Colombia that consists of 42 municipalities (Fig. 1) with a total surface area of 22,142 km²; it contains a diversity of landscapes, including very humid tropical forests, premontane pluvial forests in warm transition, dry and very dry tropical forests, and lowland montane to pluvial montane forests that range in elevation from sea level to 4,000 m. This

dpto has allocated 233,889 ha for parks and natural reserves, which because of their ecological importance and abundance of natural resources have been established in various strategic ecosystems and protected areas (Gómez et al. 2007).

Sources of information

In updating their list on the herpetofauna of Valle del Cauca, Cardona et al. (2013) considered the following:

- Geographic data: Obtained from bibliographic sources, field notes, and biological collections of amphibians and reptiles at the Universidad del Valle (UV-C), and online databases from the Instituto de Ciencias Naturales (ICN), and the National Museum of Natural History at the Smithsonian Institution (USNM).
- Threat category (species recorded from the dpto were catalogued using the following criteria): trafficking in species, deaths caused by vehicular traffic or by humans, distribution within the dpto (eco-regions, localities, life zones), occurrence in disturbed habitats, frequency of observation, number of citations in publications, and the presence of species in protected

areas. All these criteria were scored from 0 to 4, where 0 means no risk in the particular criteria, 3 high risk, and 4 is unknown (see supplemental material at amphibian-reptile-conservation.org for the definition of the score in each criteria). Based on the data obtained for each species, it calculated the weighted average for the different natural groups (amphibians, lizards, and snakes), and assigned a percentage in the final score to each criteria according to the natural group, because the same criteria does not affect each natural group in the same way (see supplemental material for the percentage assigned in each criteria). With the weighted average of each species, these were assigned to some of the categories proposed by the IUCN, as follows: LC 0–1.4, NT 1.5–2.0, VU 2.1–2.6, EN 2.7–3.0, CR 3.1–3.3, DD 3.4–4.0. Each category was justified according to the appendix of the IUCN (2012), especially considering the threats to each species. Additionally, the threat status for each species reported from the dpto was examined by searching through the IUCN Red List of Threatened Species (<http://www.iucnredlist.org/>), the red books of amphibians and reptiles in Colombia (Castaño-M 2002; Rueda-A et al. 2004), and the red book of amphibians from Valle del Cauca (Castro-H and Bolívar-G 2010).

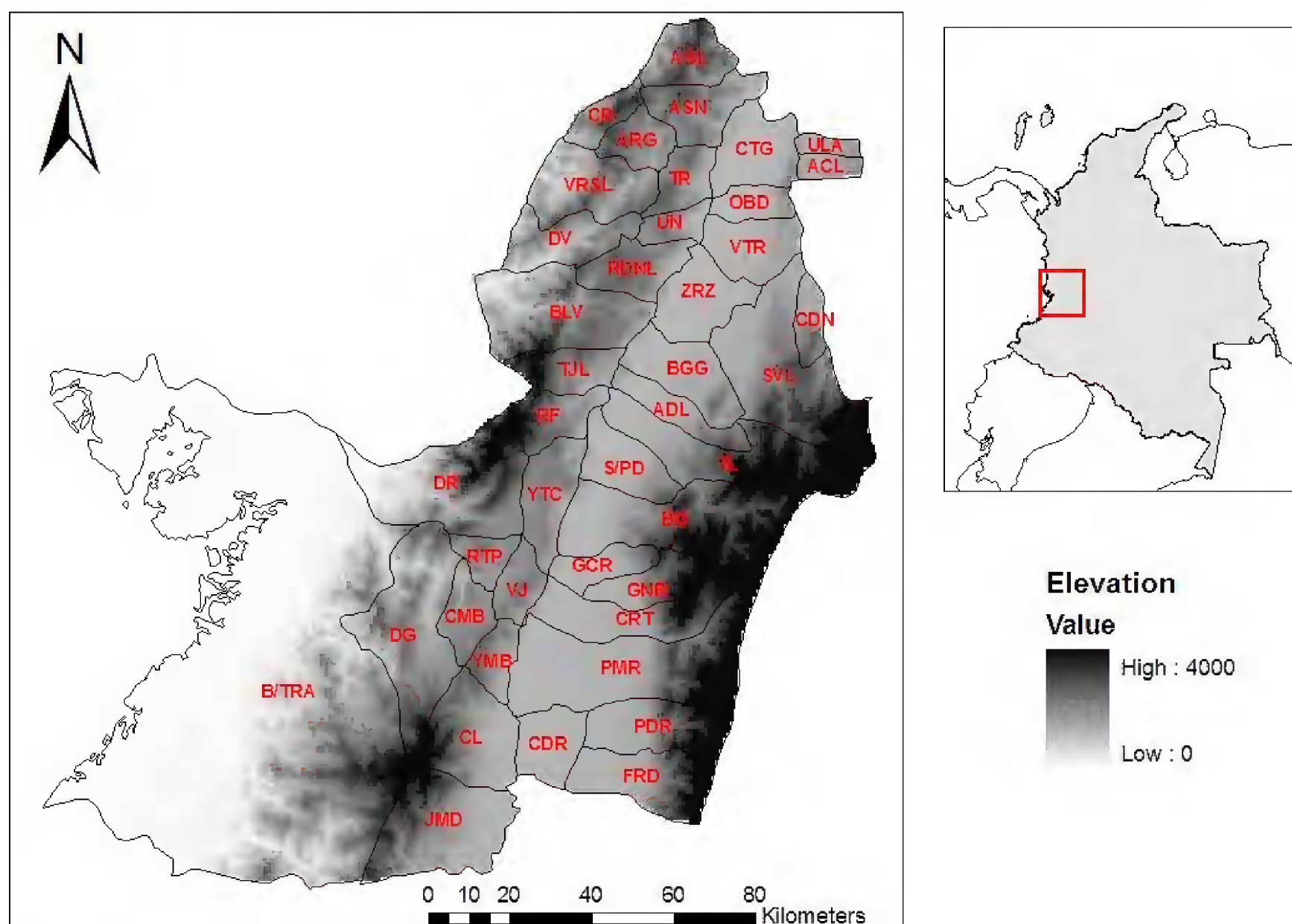


Fig. 1. Political map of Valle del Cauca (Colombia). North: El Águila (AGL), El Cairo (CR), Ansermanuevo (ASN), Argelia (ARG), Cartago (CTG), Ulloa (ULA), Alcalá (ACL), Toro (TR), Versalles (VRSL), Obando (OBD), La Unión (UN), El Dovio (DV), Roldanillo (RDNL), La Victoria (VTR), Zarzal (ZRZ), Bolívar (BLV); East: Sevilla (SVL), Caicedonia (CDN); Middle: Bugalagrande (BGG), Trujillo (TJL), Andalucía (ADL), Rio Frio (RF), Tuluá (TL), San Pedro (S/PD), Yotoco (YTC), Darién (DR), Buga (BG), Guacarí (GCR), Ginebra (GNB), Vijes (VJ), Restrepo (RTP), Cumbre (CMB), El Cerrito (CRT); South: Palmira (PMR), Yumbo (YMB), Cali (CL), Candelaria (CDR), Pradera (PDR), Florida (FRD), Jamundí (JMD); West: Buenaventura (B/tura), Dagua (DG).

- Protected areas: Each species was recorded according to geographic location and the use of bibliographic resources on protected areas within the dpto, considering the important areas with a wide extension and with the ability to hold a great diversity of herpetofauna. The definition of protected areas were defined based on the Decree-Law 622 of 1977 and 2372 of 2010 of the National Government (in parentheses the areas that were chosen in this work):
 - Parques Nacionales Naturales (PNN) is an area of great extent permitted ecological autoregulation and whose ecosystems in general have not been substantially altered by human exploitation or occupation, where plant and animal species, geomorphological resorts, historical or cultural events have scientific, educational, aesthetic and recreational value and their perpetuation is subjected to an appropriate management regime (Farallones de Cali, Las Hermosas, Uramba-Bahía Málaga, Tatamá).
 - Santuario de Flora y Fauna (SFF) is dedicated to preserving wildlife species or plant communities to preserve genetic resources of native flora and fauna (Decreto 622 de 1977), (Isla Malpelo).
 - Parque Natural Regional (PNR) is a regional geographic area where landscapes and strategic ecosystems, maintain their structure, composition and function. The natural and cultural values are associated with human disposition for preservation, restoration, knowledge, and enjoyment (La Sierpe and Páramo del Duende).
 - Reservas Forestales Protectoras (RFP) is a geographical area where forest ecosystems maintain their function, although their structure and composition have been modified and associated natural values are accessible to the human population to who allocated their preservation, sustainable use, restoration, knowledge, and enjoyment. In this type of protected area are the forests, national (RFPN) (Amaime, Anchicayá, San Cipriano and Escalerete rivers, Bosque de Yotoco, Dagua, Cali, Tuluá, Sonso-Guabas, Cerro Dapa-Carisucio) and regional (RFPR) (Bitaco and Frayle-Desbaratado) protection.
 - Reserva Natural (RN) is an area in which undisturbed conditions exist or have undergone minimal human disturbance of flora, fauna, and soil, and it is intended for conservation, research, and study of its natural wealth (Laguna de Sonso).
- Distrito de Manejo Integrado (DMI) is a geographical space where landscapes and ecosystems retain their composition and function, although their structure have been modified and whose natural and cultural associated values are set to reach the human population who allocated their sustainable use, preservation, restoration, knowledge, and enjoyment (La Plata and Enclave Subxerofítico Atuncela).
- Municipalities: Each species was recorded based on its documented geographic location within the municipalities of the dpto.

Analysis of the Data

The species distribution model for each threat category was performed using all the records collected from the different museums and georeferenced using Google Earth 7.1.2.2014; these models were constructed in MaxEnt Version 3.3.3a. The software generated models using the theory of maximum entropy only when presence data were available (Phillips et al. 2006). For this work, we used the 19 climate layers of the WorldClim project (www.worldclim.org, spatial resolution of 30 arc second or $\sim 1 \text{ km}^2$). To evaluate the predictive ability of the models generated, the Area Under the Curve (AUC) score was taken into account. The AUC is a ranked approach for assessing model fit, which determines the probability that a presence location will be ranked higher than a random background location (Phillips et al. 2006). The prediction models generated by MAXENT were mapped in ArcGIS 10.1 (ESRI 2013), with only the detection probabilities above 0.5 taken into account.

The percentages of amphibian and reptile species for each threat status was determined, and through histograms indicate the endemic number of species and total number of species in each of the protected areas.

Results

Status of threats to the herpetofauna

Approximately 51% of the species in the dpto showed some degree of risk or threat. The majority of amphibians (60%) are in one of the threat categories, with the Vulnerable (VU) containing the most species (59), followed by the Critically Endangered (CR) and Endangered (EN), each with 29, and 27 in the Near Threatened (NT) (Fig. 2A) categories. Conversely, more than one-third of the reptile species show some degree of risk, with those in the NT and VU containing the largest number of species (38 in each), followed by the EN (14), and a few (six) in the CR (Fig. 2B) categories. Of the remaining herpetofaunal species in the dpto, 17% show no risk (LC), and 14% are Data Deficient (DD; see supplemental material).

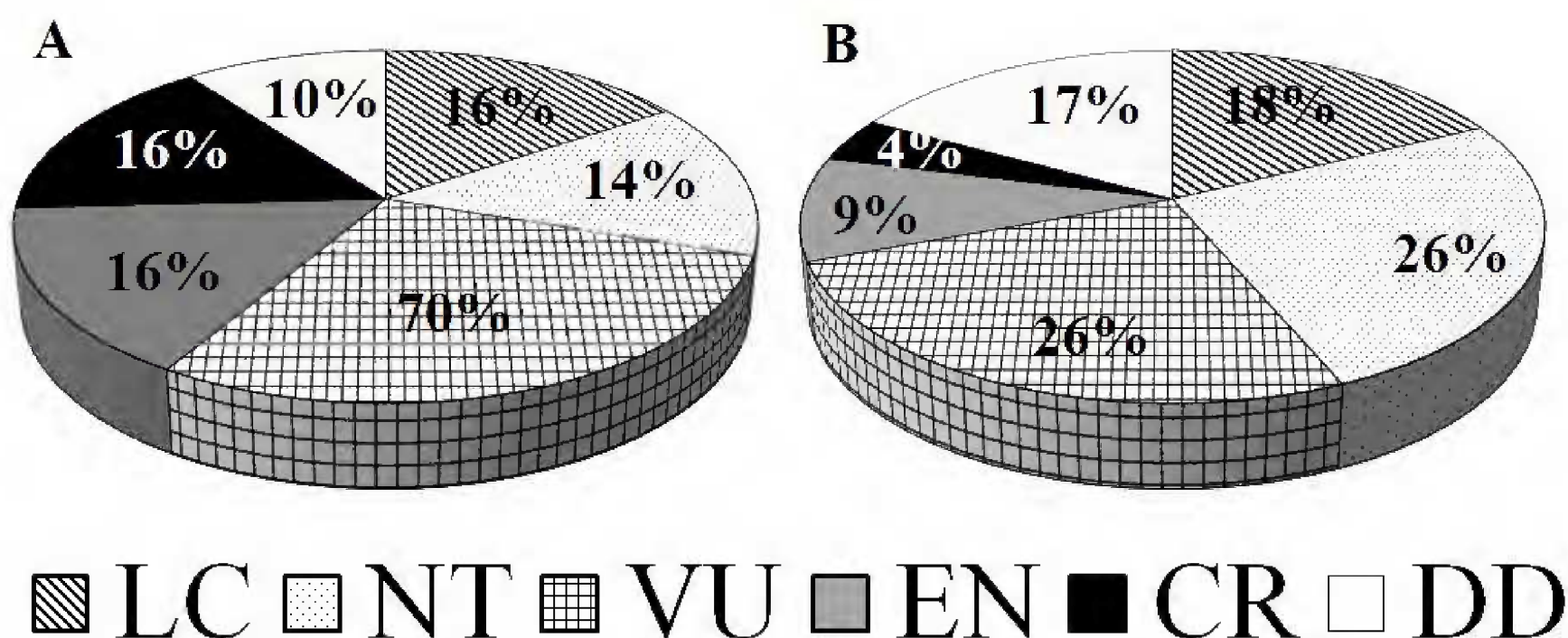


Fig. 2. Threat status of the percentage of herpetofaunal species in Valle de Cauca: (A) = Amphibians, (B) = Reptiles.

Eighty percent of the amphibian families contain species under some level of threat, with 40% of the species in the family Craugastoridae in one of the threat categories. In general, the NT species are represented mostly in the families Craugastoridae, Centrolenidae, Hylidae, Dendrobatidae, and Leptodactylidae. In addition, more than one-half of the VU species are in the family Craugastoridae; in particular, the VU and EN species follow the same pattern and include the families Craugastoridae, Centrolenidae, Dendrobatidae, and Hylidae. Significantly, 70% of the CR species are grouped in the Craugastoridae, Bufonidae, and Centrolenidae, families with the greatest risk of losing species, along with representatives of the family Hemiphractidae, which are restricted to the EN and CR. As with the amphibians, most families of reptiles (84%) contain species under some level of threat. In particular, most of the threatened species are in the families Colubridae, Dactyloidae, Dipsadidae, and Gymnophthalmidae, with most in the NT and VU categories. Over 30% of the NT species are in the family Colubridae, followed by the Dipsadidae and Dactyloidae, whereas the VU species are mostly in the Dactyloidae and Dipsadidae. The majority of EN species are in the families Colubridae, Dipsadidae, and Gymnophthalmidae. Furthermore, the CR species are represented by one species in each family, except for the Dactyloidae.

The modeling of the maps present an AUC of 0.754–0.83, indicating a better performance than the random models (Manel et al. 2001). Herpetofaunal richness is scattered throughout Valle del Cauca, but the areas (see Cardona-B. et al. [2013] to define ecoregions in the Valle del Cauca) with the greatest amount of richness are the Pacific region and the Cordilleras (Fig. 3A). The NT species show a wide distribution along the western Cordillera (specifically in the northern and central area), and cover a large area along the Interandean Valley and the Pacific (Fig. 3B). The VU species are found along the foothills and northern and central portions of the western Cordillera, but are less represented in the central Cor-

dillera and in the Interandean Valley (Fig. 3C). The EN species are found in two important areas, the Pacific region and the western Cordillera in the northern part of the dpto; in the central Cordillera, a few representatives are found in the high elevation areas of Sevilla, Tuluá, and Buga, to the north, and Palmira, Pradera, and Florida, to the south (Fig. 3D). The distribution of the CR species is important, based on the presence of *Atelopus* in the central and western Cordilleras and groups of *Pristimantis* in highland areas of the western and central Cordilleras; in addition, the centrolenids and dendrobatids are found in the western Cordillera and the Pacific region (Fig. 3E). Significantly, the DD species are distributed all along the dpto, but show similar patterns to species in the threat categories (Fig. 3F).

In particular, 90% of the municipalities in Valle del Cauca contain one species in at least one of the threat categories, whereas 62% of the municipalities contain more than two species. The municipalities of Buenaventura (82 species), Darién (61), El Cairo (51), Dagua (45), Cali (42), La Cumbre (19), and Yotoco (11) contain the greatest number of species under some level of threat (Fig. 4). A similar pattern was found in these municipalities, where the majority of species fall into the VU category, followed by the EN, and last by the CR, with the only exceptions in the municipalities of Cali and La Cumbre. The municipalities of Buenaventura (six amphibians, five reptiles), El Cairo (10, zero), and Darién (eight, one) contain the largest number of CR species.

The herpetofauna and protected areas

Protected areas in Valle del Cauca with the greatest number of species are the RFNP (228 species), followed by the PNN (120), RFPR (60), PNR (45), DMI (34), and RN (21), and the area with the least number is the SSF (three species of reptiles). The majority of the species in the RFNP and the PNN are in the VU, and in the remaining areas most of the species are in LC, except for the

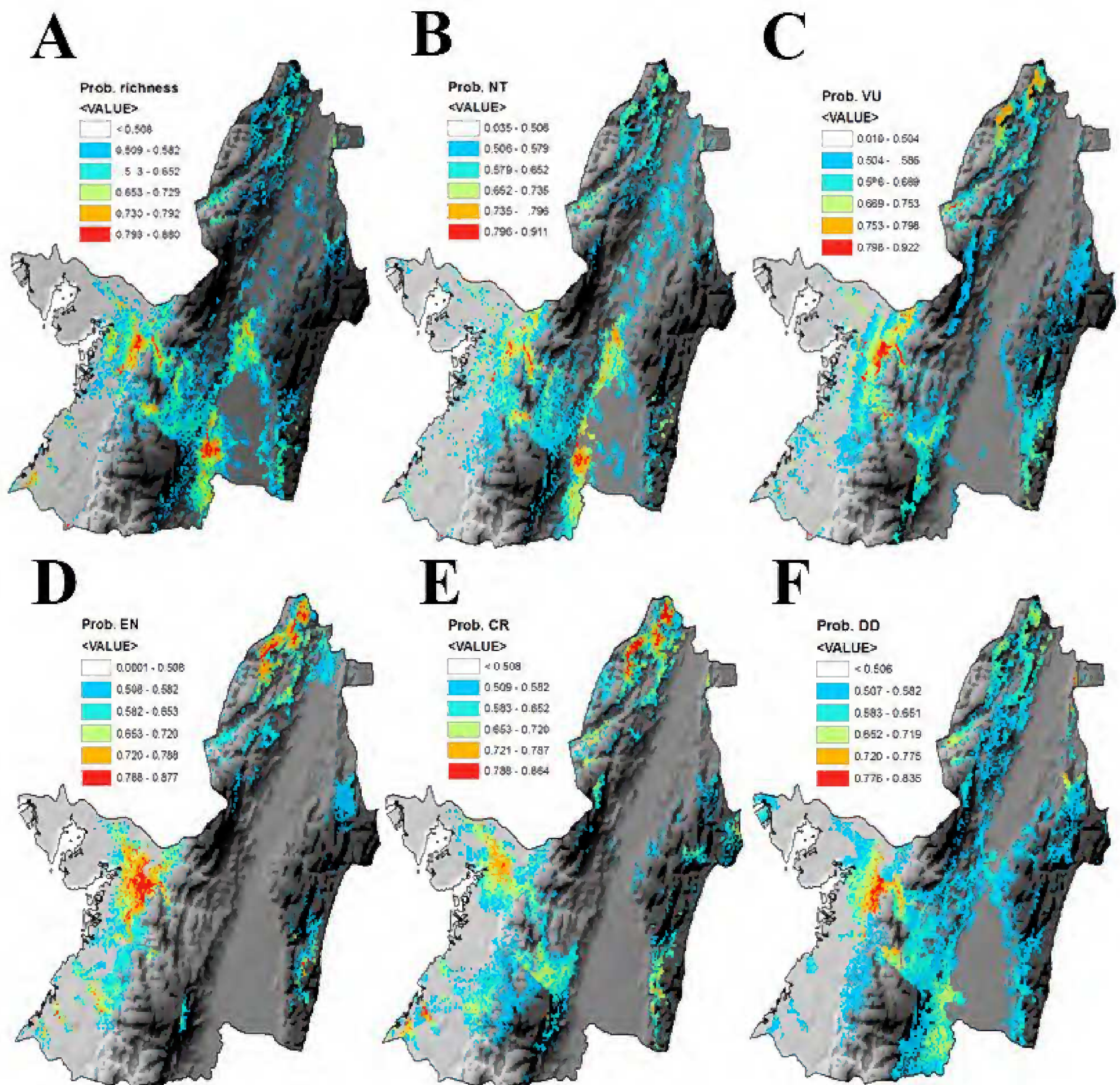


Fig. 3. Distribution maps for the richness of herpetofauna in the most documented areas in Valle del Cauca. (A) richness, (B) NT species, (C) VU species, (D) EN species, (E) CR species, and (F) DD species.

SFF (Fig. 5). The areas that protect the largest number of species in a threat category are the RFPN (162 species), the PNN (84), the RFPR (37), and the PNR (25), and the areas that protect the least numbers are the DMI, RN, and SFF (13, four, and three, respectively). Throughout the dpto, 17% (~ 57 spp.) of the species are not found in a protected area, and more than 65% of those fall into one of the threat categories (NT = four, VU = 10, EN = seven, and CR = 15). In addition, information is not available for 31% of these species (DD). The protected area with the largest number of species is the RFN de Anchicayá (183 species), followed by the PNN Farallones de Cali (90), the RFPN of the rivers San Cipriano and Escalerete (84), and the RFPR de Bitaco (49).

Endemic species

Nineteen endemic species are found in the dpto, which represents only 6% of the species diversity. Amphibians represent the largest number of species (13), with 75% in one of the threat categories: CR (six species), EN (three), and VU (two); the remaining 15% are categorized as DD. With regard to the threat categories for reptiles, three species are in the CR, and the other three are DD because they lacked sufficient information for an assessment (Fig. 6). The endemic species are distributed in four types of protected areas, the PNN and the RFPN, which contain a high number of species, and it is worth noting that the PNR el Páramo del Duende and the SFF Isla

Conservation status of the herpetofauna in Colombia

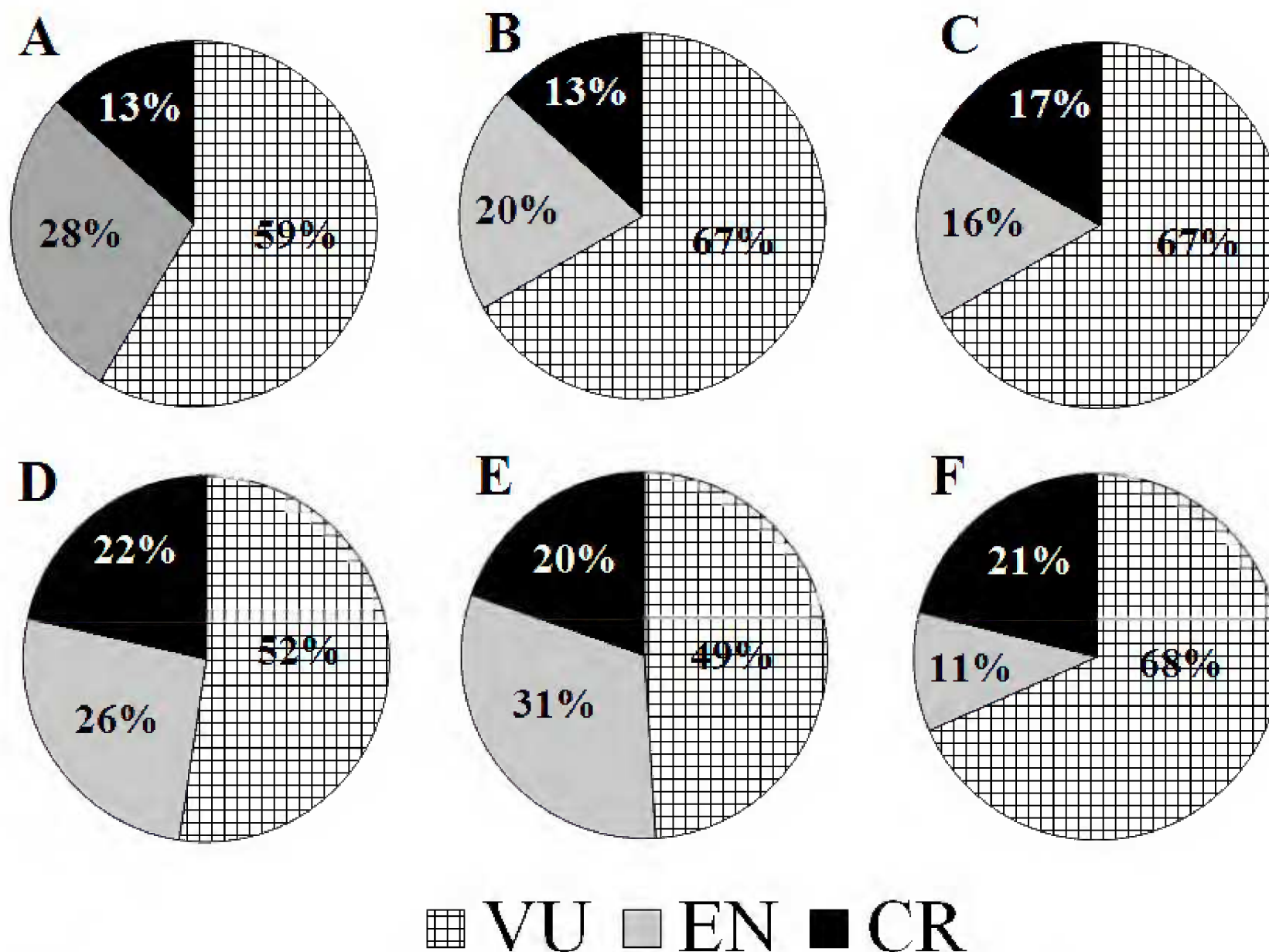


Fig. 4. Municipalities in Valle del Cauca with the greatest number of species in the threat categories: (A) Buenaventura, (B) Dagua, (C) Cali, (D) Darién, (E) El Cairo, and (F) La Cumbre.

de Malpelo are the types of areas with the greatest number of endemic species. Only four species (*Pristimantis diaphonus*, *Anomaloglossus atopoglossus*, *Nymphargus armatus*, and *Geophis betaniensis*) are not found in any of these areas.

Discussion

Conservation status of amphibians and reptiles

The need to recognize the status of a species in a specific area should be considered baseline information for developing studies and management plans for its conservation. The IUCN categorizations are generally applied globally for each taxon to determine the status of a species at the local or regional levels, and are considered advanced studies (Castro-H. and Bolívar-G. 2010); information on certain species (e.g., population status, natural history) is necessary to elicit an approximate categorization. Records for the DD species (13% of the species in this study) are not well represented in herpetological collections (some are only known from their original descriptions), and thus it is not possible to determine their status.

The dpto contains a high proportion of amphibian species (60%) in one of the threat categories, which represents nearly one-half of the total herpetofauna of the dpto, and the majority of these species show a moderate risk of extinction or population decline over the medium term (VU). In comparison with the results of Castro-H

and Bolívar-G (2010), we show a significant increase in the number of species in the CR (11), EN (10), VU (12), and NT (one) categories, indicating that the risk of disappearance has increased in certain species, which is troublesome.

The lack of a threat status among the reptiles results from insufficient basic ecological information and the actual distribution of their populations (Urbina-Cardona 2008), for which an evaluation of the threat status has focused on specific species or groups (e.g., the red book of reptiles in Colombia), and thus has become a problem for planning conservation strategies. For this reason, the status of populations of reptile species in a given area has been proposed as a mechanism to change attitudes and generate interest in preserving these organisms (Dodd 2001), the protection and restoration of large areas these organism inhabit (Roe et al. 2004; França and Araújo 2006), species-specific information, field studies, demographics, natural history, and possible threats (Cagle 2008; Elfes et al. 2013). Significantly, this study is a local proposal that easily addresses the status of reptile species in Valle del Cauca, so that more effective strategies can be accomplished. This study is the first to assess many species of reptiles, and in spite of their low density threats might make them vulnerable and affect their abundance in the dpto; in many cases, characteristics of their natural history allow them to avoid these conditions.

The conservation of snakes remains subjective, because the current status of many species remains un-

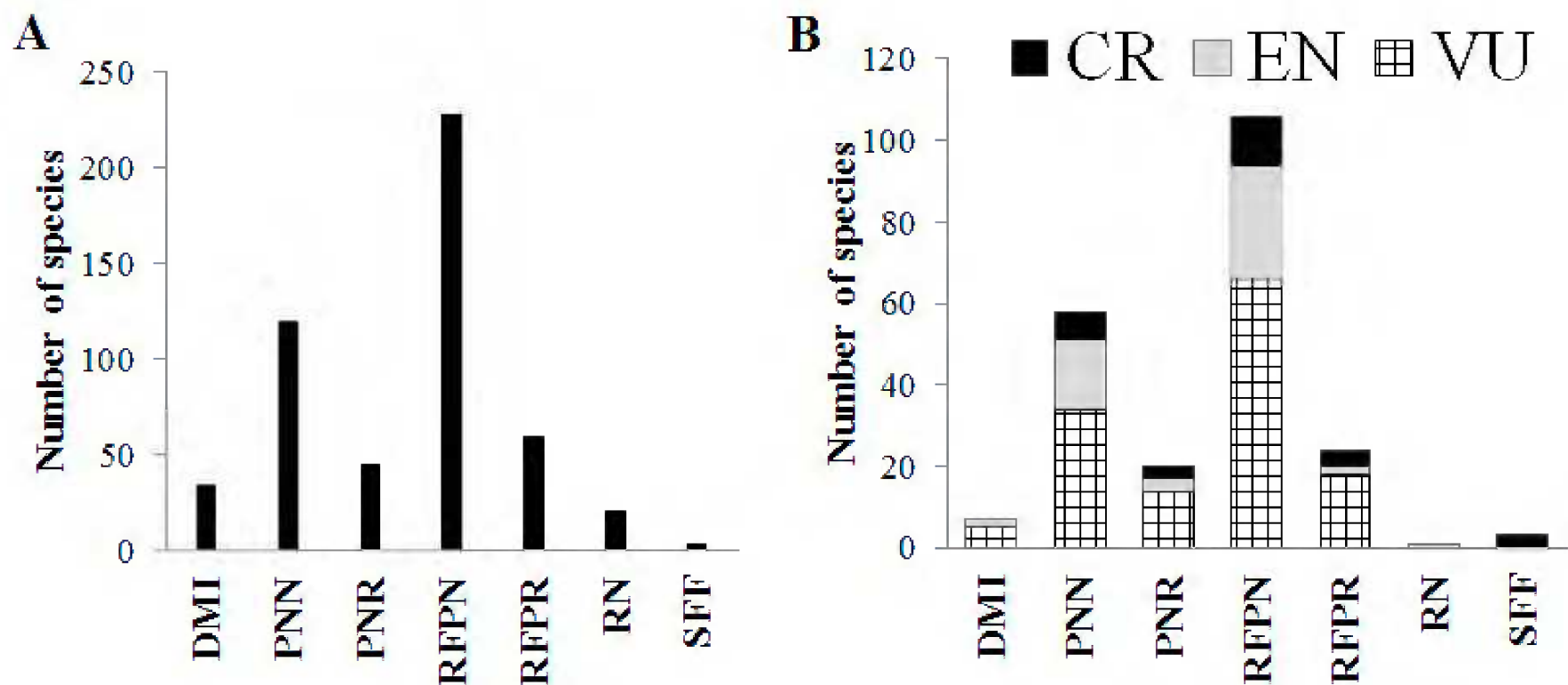


Fig. 5. The herpetofauna of Valle del Cauca according to (A) the type of protected area, and (B) species with some degree of threat in each type of protected area.

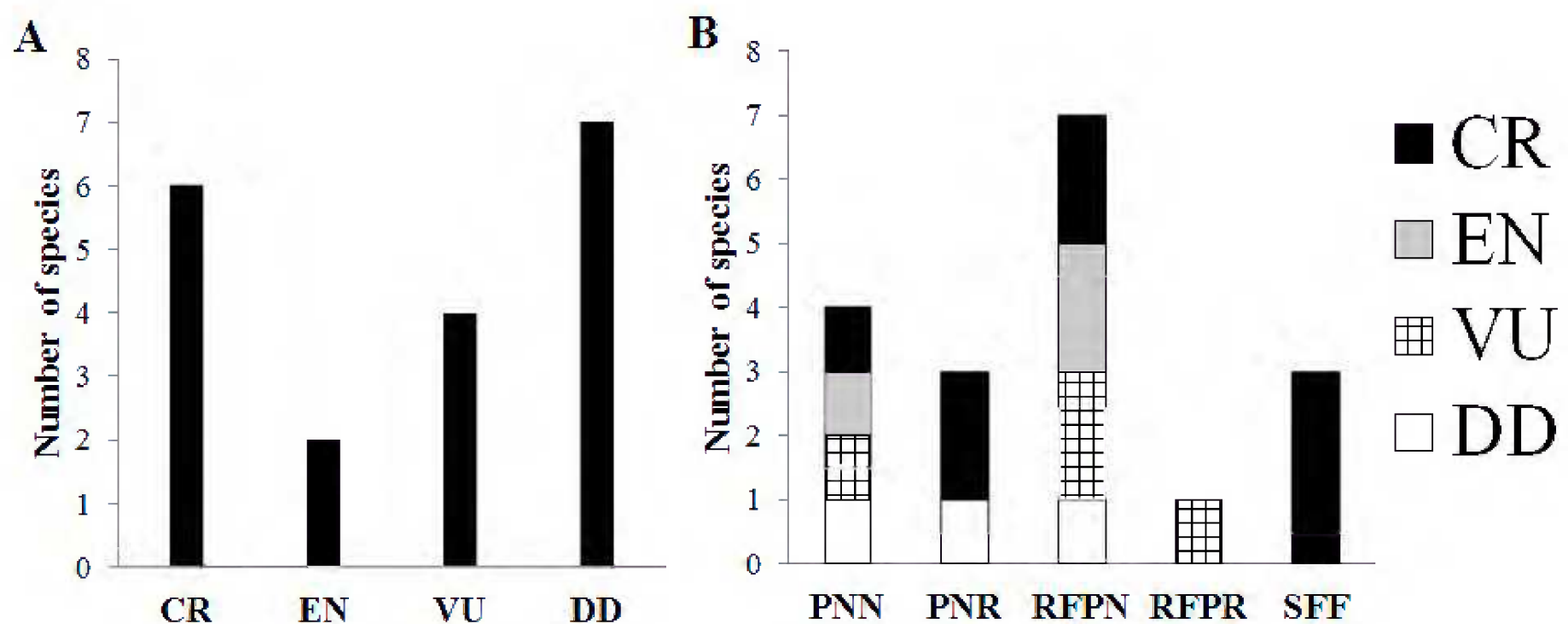


Fig. 6. Endemic species listed according to (A) threat category, and (B) by protected areas in Valle del Cauca.

known. According to Lynch (2012), these animals are some of the most threatened because their deaths are provoked by people living in rural areas, vehicles traveling on highways, the loss of habitat, climate change, and illegal trafficking. Vargas et al. (2011) showed that even in a protected area such as the RFPN Bosque de Yotoco (Valle del Cauca), some snakes are vulnerable to the effects of roads on account of the prolonged amount of time that deaths by vehicles have been caused, considering the low density of populations and small size of the reserve.

Threatened species in the municipalities and protected areas

Because of their considerable size and strategic location in high diversity life zones, municipalities such as Buenaventura, El Cairo, and Dagua contain a large number of threatened species of both groups (Cardona et al. 2013); however, these areas are the focal point of

anthropogenic pressures, and thus certain species have been affected. Moreover, municipalities such as El Águila, Ulloa, El Dovio, Versalles, Ansermanuevo, Florida, Pradera, Palmira, El Cerrito, Buga, Tuluá, and Sevilla, among others, lack adequate sampling and are under-represented in collections, and the few data available from these municipalities correspond to widely distributed generalist species, such as colubrid and dipsadid snakes that because of their high dispersal abilities can easily adapt to anthropogenic environments, and thus are categorized as LC (Adams 1994). Conservation efforts, therefore, should be focused in habitats influenced by the western versant of the central Cordillera, important areas for species in the different threat categories.

The distribution of the threat categories in the dpto reflects the pressures on the categorized species; for example, a large number of CR species are in the genus *Atelopus* and most of these are distributed in the two Cordilleras, and like their congener species possibly have been seriously affected by chytridiomycosis (Bonaccorso



Hypsiboas picturatus, Buenaventura, San Cipriano, 2003, Fdo Castro.

and Guayasamin 2003; Sanchez et al. 2008; Coloma et al. 2010). In addition, the fragmentation and loss of habitat due to human activities have affected certain sensitive species (like the centrolenids and dendrobatids) principally distributed in the Andean Cordilleras (Hutter et al. 2013) and in the Pacific region (Castro-H and Bolívar 2010). Besides these pressures, several species have experienced a population decline as a result of illegal trafficking and collection for scientific studies (Castro-H and Bolívar-G 2010; Corredor et al. 2010).

Additionally, in evaluating natural groups the “Sistemas Municipales de Áreas Protegidas” (Municipal System of Protected Areas; SIMAP) and the “Sistemas Nacionales de Áreas Protegidas” (National System of Protected areas; SINAP) have centered in municipalities such as Buenaventura, Cali, Dagua, La Cumbre, El Cairo, Darién, and Yotoco in an effort to better understand the conservation status of species in these areas, and to promote the monitoring of populations of these organisms. Furthermore, a network of community reserves is present in the municipality of El Cairo, in the Serranía de los Paraguas (which were not included in our analysis), and we suggest studying and monitoring the natural populations of many threatened and endemic species in this area in order to promote their conservation.

A greater number of species are found in RFPN than in the PNN because of three factors: (1) an extensive area of the RFPN (ca. 154,091 ha) lies in Valle del Cauca, (CVC 2012); although is not larger than that of the PNN,

compared to other types of areas it represents a substantial part of the territory; (2) several reserves in the dpto are located in areas of great richness, such as the RFPN of Anchicayá, and of the San Cipriano and Escalere rivers in the Pacific Region (Cardona et al. 2013); and (3) extensive research projects have been conducted in several of these areas, for which many bibliographic references are available and a large number of specimens are present in collections, such as in the RFN del Bosque de Yotoco, in which the research group from the Laboratorio de Herpetología de la Universidad del Valle has been conducting inventories from 1978 until the present and recorded a large list of species, of which some are no longer being reported from the area (Castro et al. 2007).

In spite that one of the most effective methods for preserving natural spaces is the use of specific forms of protection and legal regulation that limit or prohibit the development of productive or extractive activities (Vásquez and Serrano 2009), state policies are necessary to guarantee the conservation of important ecological areas (Castro-H and Bolívar-G. 2010) by means of the environmental authority granted to autonomous corporations. In Valle del Cauca, several CR species undergoing population pressures were found in the PNN and the RFPN, such as *Oophaga lehmani*, in which the principal causes for decline in protected areas are the loss of habitat and illegal trafficking (Avila 2007), a clear example of not applying the articles of the *Código de Recursos Naturales Renovables y Protección del Medio Ambiente*



Bolitoglossa medemi, Buenaventura, Bendiciones, 2011.



Oophaga histrionica, Buenaventura, Anchicaya, 2000.



Strobomantis ruizi, Trujillo, Andinapolis, 2010.



Agalychnis spurelli, Buenaventura, san Cipriano, 2003.



Andinobates bombetes, Darien, Lago Calima, 2005.



Diasporus gularis, Buenaventura, Bazan, 2010.



Gastrotheca antomia, Dagua, Alto Queremal, 1993, Extinct.



Pristimantis achatinus, Buenaventura, Bazan, 2010.

(*Code of Renewable Natural Resources and Environmental Protection*; CRN). A similar situation exists with other species of amphibians and reptiles that are under great pressure in protected areas of Valle del Cauca, such as the ones mentioned previously and including mining, death caused by humans, and pesticide contamination from the fumigation of illicit crops, which illustrates a lack of control in these protected areas. In addition, the current laws in these areas and the reasons for proposing them are not clear, such as for preservation, conservation, and ecotourism, and in some areas they could supersede their carrying capacity.

Castro-H and Bolívar-G (2010) indicated that within the great variety of habitats found in the dpto those with specific characteristics became inclusive centers of speciation, and that these unique areas are of great importance because they contain endemic species. The endemic species in these areas could easily disappear on account of an environmental threat, because of their specialized requirements and limited distribution. The size of their distributional range is indispensable for their conservation, and these species should be included in at least one state protected area where conditions are stable, so there is less potential for risks and their populations can continue to develop (Rueda-A. et al. 2004). These requirements are necessary for their preservation, but it is worth noting that four endemic species (*Nymphargus armatus* and *Anomaloglossus atopoglossus* [CR], *Pristimantis diaphonus* [EN]; and the snake *Geophis betanienensis* [DD]) are not found in any of protected areas designated by the government and/or autonomous regional corporations (CAR = Institutions that are responsible for implementing the policies, plans, programs, and projects on environment and renewable natural resources. Also, they give a full and application to current legal provisions, under the regulations, standards, and guidelines issued by the ministry of environment), which makes them even more susceptible to threats.

Global categorization vs local situations

Many species of continental turtles and crocodilians are sacrificed for consumption of their meat and eggs, and commercialization of their skins. In addition, pet commercialization, global warming, and developmental activities such as hydroelectric plants also have had a negative impact on their populations (Rueda-A. et al. 2007; Páez et al. 2012). For these reasons, these charismatic species are used to promote studies (biological and economic) and the categorization of these organisms (Castaño-M. 2002; Páez et al. 2012). Various local pressures, however, lead to an analysis of the situation or threat status of these species; for example, *Kinosternon leucostomum* (NT in this study) is a broadly-distributed species for which we have wide information on its ecology and reproductive biology (Giraldo et al. 2012), but it has been affected by habitat deterioration and is con-

sidered the most trafficked pet trade vertebrate species in southwestern Colombia (Galvis-R. and Corredor-L. 2005), which threatens the natural populations.

Although the loss of biological diversity in Colombia has been studied for several years, and plans for the management of threatened species that include a prioritized list of amphibians (Castro-H and Bolívar 2010) have been implemented at the regional and national levels, additional actions and research are still required. Some species in Valle del Cauca that appear in the IUCN category of LC, such as *Gastrotheca argenteovirens* (Ramírez-P. et al. 2004) and *Anolis fraseri* (Castañeda et al. 2011), are at risk and others listed as VU, such as *Centrolene geckoiideum* (Bolívar et al. 2004) and *Gastrotheca antomia* (Castro and Lynch 2004), have not been reported from the dpto in recent years, which suggests a subjectivity in analyzing the threat category in these species, especially on a regional basis. Also, the fossorial habits and difficulty in locating organisms such as caecilians must be considered, and thus their threat status is difficult to determine. According to the IUCN, most species of caecilians are categorized as LC and two species (*Caecilia guntheri* and *Oscacilia polizona*) as DD; however, on a local scale and considering the lack of information for these organisms, not enough data is available to establish a category in the dpto, as reflected in the family Caeciliidae. Similarly, other species might appear stable, but with additional data and the implementation of management plans their threat status might be updated so that protected areas will be able to comply with their function and agreements, in addition to the implementation of management plans for the short, medium, and long terms that are in place but have not been assumed by the environmental authority (CAR del Valle del Cauca, CVC), where all the stakeholders are included.

Conclusions

One-half of the herpetofauna of Valle del Cauca is under some degree of threat, which is important for the conservation of this fauna, mainly in two areas in the western Pacific region (municipality of Buenaventura) and north on western Cordillera (municipality of Cairo). These hotspots are locations where extensive sampling of the herpetofauna has been conducted, and where species under some degree of threat occur differentially along the dpto.

Additional information on the distribution of amphibians and reptiles, the current status of populations, and the natural history of species in Valle del Cauca are necessary to develop an initiative for a conservation program with specific short-term objectives, so that decisions can help mitigate negative effects in the populations. Furthermore, the protected areas and municipalities in the dpto must develop monitoring plans in their areas that contain detailed information on the presence or absence



Hypsiboas rubracila, Buenaventura, Bazan, 2014.



Pristimantis juanchoi, La Cumbre, Chicoral, 2010.



Centrolene gekkoideum, La Cumbre, Chicoral, 1988, Extinct.



Anolis lyra, Buenaventura, Bazan, 2010.



Kinosternon Leucostomum, Buenaventura, Zaragoza, 2013.



Thecadactylus rapicaudus, Buenaventura, Zaragoza, 2009.



Basiliscus galeritus, Buenaventura, Zaragoza, 2013.



Diploglossus monotropis, Buenaventura, Bahia Malaga, 2013.

of species, so that along with other organizations they can negotiate the protection and conservation of ecosystems essential for the herpetofauna. In particular, we ask the CAR to ensure compliance with the development of these initiatives.

The conservation of endemic species of amphibians and reptiles should be clear and we must recognize that this requires special management, but the current regulations are not clear enough to define the measures that actually will allow the implementation of specific conservation plans for these species; in many places, the type of area will not allow the sustainability of these species, which are an emblem for the dpto.

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Anolis eulaemus, La Cumbre, Chicoral, 2013.



Gontadoes albogularis, Cali, 2014.



Bothrocophias myersi, Buenaventura, Bazan, 2013.



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Conservation status of the herpetofauna in Colombia



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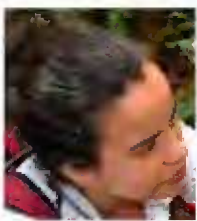
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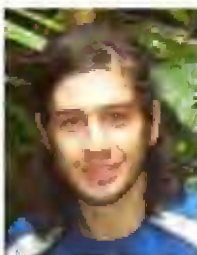
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- Small changes in vegetation structure changes in amphibian create great ensembles in the Colombian Pacific rainforest. *Tropical Conservation Science* 6(6): 749–769 (2013). Available: http://tropicalconservationscience.mongabay.com/content/v6/TCS-2013-Vol6%286%29_749-769_Cortes-et-al.pdf [Accessed: 30 November 2014].
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Supplemental Material

Conservation status of the herpetofauna, protected areas, and current problems in Valle del Cauca, Colombia

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Table 1. Taxonomic list of amphibians and reptile of the department of Valle del Cauca (Cardona-B. et al. 2014). Actualization of threat categories based on: IUCN (red list), Red Book of Amphibians (Rueda et al.) and Reptile (Castaño-M. et al 2002) of Colombia, Red Book of Amphibians of Valle del Cauca (Castro-H. and Bolívar-G 2010), and current categorization of the amphibians and reptile for Valle del Cauca. Also is denoted the municipalities and protected areas where the species is distributed; and a (†) is noted in the category when a species is endemic for the department.

TAXON	IUCN	Red book of Colombia	Red Book of Valle del Cauca	Categorization for the departament	Municipality	Protected area
CLASS AMPHIBIA						
ORDEN ANURA						
FAMILIA AROMOBATIDAE						
<i>Allobates talamancae</i> (Cope, 1875)	LC			NT	Bu, Dar	RFPN Anchicaya
<i>Anomaloglossus atopoglossus</i> (Grant, Humphrey & Myers, 1997)	DD		CR	CR, B1ab(iii)(†)	Cai	
<i>Anomaloglossus lacrimosus</i> (Myers, 1991)	DD		VU	EN, B1a	Bu	RFPN Anchicaya, PNR La sierpe
FAMILIA BUFONIDAE						
<i>Atelopus cf. famelicus</i> (Rivero and Morales, 1995) (<i>sensu latu</i>)	CR		CR	CR, B1ab(iii)	Bu, Cal, Yo	RFPN Anchicaya, RFPN de Cali
<i>Atelopus chocoensis</i> (Lötters, 1992)	CR		CR	CR, B2ab(iii)	Cai	
<i>Atelopus eusebianus</i> (Rivero and Granados, 1993)	CR	EN		CR, B2ab(iii)	FI	
<i>Atelopus cf. ebenoides</i> (Rivero, 1963)	CR	CR		CR, B1ab(iii)	Ce	

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TAXON	IUCN	Red book of Colombia	Red Book of Valle del Cauca	Categorization for the departament	Municipality	Protected area
<i>Atelopus pictiventris</i> (Kattan, 1986)	CR		CR	CR, B2ab(iii)(†)	Cal	PNN Farallones de Cali, RFPN de Cali
<i>Atelopus spurrelli</i> (Boulenger, 1914)	VU		VU	EN, A1a	Bu, Dar	RFPN Anchicaya, DMI La Plata, PNR La sierpe
<i>Incilius coniferus</i> (Cope, 1862)	LC			CR, B2ab(iii)	Dar	
<i>Rhaebo andinophrynoides</i> (Mueses-Cisneros, 2009)	NE			DD	Bu	PNN Farallones de Cali
<i>Rhaebo blomeri</i> (Myers and Funkhouser, 1951)	NT		NT	CR, B1ab(iii)	Bu, Dar	PNN Farallones de Cali, RFPN Anchicaya
<i>Rhaebo haematiticus</i> (Cope, 1862)	LC			LC	Bu, Da, Dar	RFPN Anchicaya, RFPN de los rios San Cipriano y Escalerete, PNN Farallones de Cali
<i>Rhaebo hypomelas</i> (Boulenger, 1913)	NT			VU, A1ace	Bu, Da, Dar	RFPN Anchicaya, RFPN de los rios San Cipriano y Escalerete, PNN Farallones de Cali
<i>Rhinella cf. margaritifera</i> (Laurenti, 1768)	LC			LC	Bu, Dar	RFPN Anchicaya, PNR La sierpe, RFPN de los rios San Cipriano y Escalerete, DMI La Plata
<i>Rhinella paraguas</i> (Bolívar and Grant, 2014)	EN	VU		EN, B2ab(iii)	Cai	
<i>Rhinella marina</i> (Linnaeus, 1758)	LC			LC	Al, An, Ans, Ar, Bo, Bu, Bug, Bul, Ca, Cal, Can, Car, Da, Dar, Do, Cai, Ce, Ag, Fl, Gi, Gu, Ja, Cu, Vi, Un, Ob, Pa, Pr, Re, Ri, Ro, Sp, Se, To, Tr, Tu, Ul, Ve, Vij, Yo, Yu, Za	RFPR Bitaco, RFN Cerro Dapa-Cariscio, PNN Tatama, RFPN Anchicaya, RFPN de Tuluá, RFPN de los rios San Cipriano y Escalerete, PNN Farallones de Cali, RFPN de Cali, RNR Laguna de sonso o Cienaga de chircal, RFPN del Bosque de Yotoco,
FAMILIA CENTROLENIDAE						
<i>Centrolene ballux</i> (Duellman & Burrows, 1989)	CR			CR, B2ab(iii)	Da	PNN Farallones de Cali
<i>Centrolene buckleyi</i> (Boulenger, 1882)	VU		VU	VU, B2ab(iii)	Cal, Cai, Tu, Tr	PNN Farallones de Cali, PNR Paramo El Duende
<i>Centrolene geckoi-deum</i> (Jiménez de la Espada, 1872)	VU		VU	CR, A1ace	Cal, Cai, Da, Cu	PNN Farallones de Cali, RFPN Anchicaya, RFPR Bitaco
<i>Centrolene heloderma</i> (Duellman, 1981)	CR		CR	EN, B2ab(iii)	Cal, Cai	PNN Farallones de Cali
<i>Centrolene peristictum</i> (Lynch & Duellman, 1973)	VU		VU	EN, B2ab(iii)	Cal, Cai, Da	PNN Farallones de Cali, RFPN Anchicaya

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<i>Centrolene robledo</i> (Ruiz-Carranza & Lynch, 1995)	VU			EN, B2ab(iii)	Cai, Da, Ri	RFPN Anchicaya
<i>Centrolene savagei</i> (Ruiz-Carranza & Lynch, 1991)	VU			NT	Bo, Cal, Da, Cu, Yo	PNN Farallones de Cali, RFPN Anchicaya, RFPN de Cali, RFPN Bosque de Yotoco, RFPR Bitaco
<i>Cochranella balionota</i> (Duellman, 1981)	VU			CR, B2ab(iii)	Da	
<i>Cochranella megista</i> (Rivero, 1985)	NT			CR, B2ab(iii)	Cai	
<i>Espadarana callistomma</i> (Guayasamin & Trueb, 2007)	DD			NT	Bu	RFPN de los rios San Cipriano y Escalerete
<i>Espadarana prosoblepon</i> (Boettger, 1892)	LC			NT	Bu, Dar	RFPN de los rios San Cipriano y Escalerete, RFPN Anchicaya
<i>Hyalinobatrachium aureoguttatum</i> (Barrera & Ruiz-Carranza, 1989)	NT			VU, A3ace	Bu, Da, Dar	RFPN Anchicaya
<i>Hyalinobatrachium colymbiphyllum</i> (Taylor, 1949)	LC			CR, B1ab(iii)	Bu	RFPN Anchicaya
<i>Hyalinobatrachium fleischmanni</i> (Böettger, 1893)	LC			VU, A3ace	Bu	RFPN Anchicaya
<i>Hyalinobatrachium valerioi</i> (Dunn, 1931)	LC			VU, A3ace	Bu	RFPN Anchicaya
<i>Nymphargus armatus</i> (Lynch & Ruiz-Carranza, 1996)	VU		VU	CR, B2ab(iii)(†)	Cai	
<i>Nymphargus grandisonae</i> (Cochran & Goin, 1970)	LC			VU, B1ab(iii)	Cai, Da	RFPN Anchicaya
<i>Nymphargus griffithsi</i> (Goin, 1961)	VU		VU	VU, A2ace	Cal, Cai, Da	PNN Farallones de Cali, RFPN Anchicaya
<i>Nymphargus ignotus</i> (Lynch, 1990)	NT		NT	NT	Cal, Cai, Da, Cu	PNN Farallones de Cali, RFPN Anchicaya, RFPN de Cali, RFPR Bitaco
<i>Nymphargus prasinus</i> (Duellman, 1981)	VU		VU	CR, B2ab(iii)	Da	
<i>Nymphargus ruizi</i> (Lynch, 1993)	VU		VU	VU, A2ace	Bug, Cal, Cai, Da, Pa	PNN Farallones de Cali, PNN Las hermosas, RFPN Anchicaya, RFPN de Amaime
<i>Rulyrana orejuela</i> (Duellman & Burrowes, 1989)	DD			EN, B1ab(iii)	Da	RFPN Anchicaya
<i>Sachatamia albomaculata</i> (Taylor, 1949)	LC			EN, B2ab(iii)	Bu	RFPN Anchicaya
<i>Sachatamia ilex</i> (Savage, 1967)	LC			NT	Bu, Da, Dar	RFPN Anchicaya, DMI La Plata

TAXON	IUCN	Red book of Colombia	Red Book of Valle del Cauca	Categorization for the departament	Municipality	Protected area
<i>Teratohyla pulverata</i> (Peters, 1873)	LC			VU, B2ab(iii)	Bu, Da	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya
<i>Teratohyla spinosa</i> (Taylor, 1949)	LC			NT	Bu, Da	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya
FAMILIA CRAUGASTORIDAE						
<i>Craugastor fitzingeri</i> (Schmidt, 1857)	LC			LC	Bu, Dar	PNR La sierpe, RFPN Anchicaya
<i>Craugastor longirostris</i> (Boulenger, 1898)	LC			LC	Bu, Dar	PNR La sierpe, RFPN Anchicaya, RFPN de los rios San Cipriano y Escalere
<i>Craugastor opimus</i> (Savage & Myers, 2002)	LC			CR, B2ab(iii)	Bu, Dar	PNR La sierpe
<i>Craugastor raniformis</i> (Boulenger, 1896)	LC			LC	Bu, Da, Dar	RFPN Anchicaya, DMI Enclave subxerofítico de Atuncela, PNR La sierpe, RFPN de los rios San Cipriano y Escalere
<i>Hypodactylus babax</i> (Lynch, 1989)	LC			EN, B2ab(iii)	Da, Cai	RFPN Anchicaya
<i>Hypodactylus mantipus</i> (Boulenger, 1908)	LC			NT	Cal, Cu, Da, Dar, Tr, Yo, Yu	PNN Farallones de Cali, RFPN de Cali, RFPR Bitaco, RFPN Anchicaya, RFPN del Bosque de Yotoco; RFPN Cerro Dapa - Carisucio
<i>Pristimantis acatallelus</i> (Lynch & Ruiz-Carranza, 1983)	LC			VU, B2ab(iii)	Cal, Cai	PNN Farallones de Cali
<i>Pristimantis achatinus</i> (Boulenger, 1898)	LC			LC	Bu, Da, Dar	RFPN Anchicaya, DMI La Plata.
<i>Pristimantis alalocophus</i> (Roa-Trujillo & Ruiz-Carranza, 1991)	NT		NT	VU, B2ab(iii)	Bug, Fl, Pa, Tu	RFN Amaime, PNN Las hermosas, RFPR Frayle-Desbaratado
<i>Pristimantis albericoi</i> (Lynch & Ruiz-Carranza, 1996)	CR			CR, B2ab(iii)	Cai	
<i>Pristimantis angustilineatus</i> (Lynch, 1998)	EN		EN	VU, B2ab(iii)	Cai, Tr	
<i>Pristimantis aurantiguttatus</i> (Ruiz-Carranza, Lynch & Ardila-Robayo, 1997)	DD			DD	Cai	
<i>Pristimantis boulengeri</i> (Lynch, 1981)	LC			VU, B2ab(iii)	Bug, Fl, Pa	RFPR Frayle-Desbaratado, PNN Las hermosas
<i>Pristimantis brevifrons</i> (Lynch, 1981)	LC			LC	Cal, Cai, Cu, Da, Fl, Tr, Yo	RFPR Bitaco, RFR Frayle-Desbaratado, PNN Farallones de Cali, RFPN del Bosque de Yotoco, RFPN Cerro Dapa - Carisucio, RFPN de Cali, RFPN Anchicaya

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<i>Pristimantis buckleyi</i> (Boulenger 1882)	LC			NT	Cal, Cai, Ce, Fl, Pa, Tu	RFN Amaime, PNN Farallones de Cali, RFPR Frayle-Desbaratado,
<i>Pristimantis calcaratus</i> (Boulenger, 1908)	EN		EN	NT	Cal, Cai, Cu, Da, Yo	RFPN de Cali, PNN Farallones de Cali, RFPR Bitaco, RFPN del Bosque de Yotoco
<i>Pristimantis calcarulatus</i> (Lynch, 1976)	VU			VU, B2ab(iii)	Cal, Cum	PNN Farallones de Cali, RFPR Bitaco
<i>Pristimantis capitonis</i> (Lynch, 1998)	EN		VU	VU, B2ab(iii)	Cal, Cai, Da, Tr	PNN Farallones de Cali, RFPN Anchicaya
<i>Pristimantis caprifer</i> (Lynch, 1977)	LC			VU, B2ab(iii)	Bu, Da, Dar	RFPN Anchicaya
<i>Pristimantis chalceus</i> (Peters, 1873)	LC			NT	Bu, Da, Dar	RFPN Anchicaya
<i>Pristimantis chrysops</i> (Lynch & Ruiz-Carranza, 1996)	EN		EN	EN, B2ab(iii)	Cal, Cai, Da, Yo	RFPN Anchicaya, RFPN de Cali, RFPN del Bosque de Yotoco
<i>Pristimantis deinops</i> (Lynch, 1996)	EN		EN	EN, B2ab(iii)(†)	Cal, Cai, Da, Yo	RFPN Anchicaya, RFPN de Cali, RFPN del Bosque de Yotoco
<i>Pristimantis diaphonus</i> (Lynch, 1986)	VU		VU	EN, B2ab(iii)(†)	Da, Re	
<i>Pristimantis duende</i> (Lynch, 2001)	DD			CR, B2ab(iii)(†)	Tr	PNR Páramo el Duende
<i>Pristimantis erythropleura</i> (Boulenger, 1896)	LC			LC	Cal, Cai, Cu, Da, Dar, Tr, Yo	RFPR Bitaco, RFPN de Cali, RFPN Anchicaya, PNN Farallones de Cali, RFPN del Bosque de Yotoco
<i>Pristimantis gaigeae</i> (Dunn, 1931)	LC			NT	Bu	RFPN Anchicaya, DMI La Plata, RFPN de los rios San Cipriano y Escalerete
<i>Pristimantis gracilis</i> (Lynch, 1986)	VU		VU	CR, B2ab(iii)	Cal, Cai, Cu	PNN Farallones de Cali, RFPR Bitaco
<i>Pristimantis hybotragus</i> (Lynch, 1992)	VU		VU	VU, B2ab(iii)(†)	Bu, Dar	PNR La sierpe, RFPN Anchicaya, RFPN de los rios San Cipriano y Escalerete
<i>Pristimantis juanchoi</i> (Lynch, 1996)	VU		NT	NT	Cal, Cai, Cu, Da, Dar, Yo	RFPR Bitaco, RFPN Anchicaya, RFPN de Cali, RFPN del Bosque de Yotoco.
<i>Pristimantis kelephas</i> (Lynch, 1998)	VU		VU	CR, B2ab(iii)	Cai	
<i>Pristimantis labiosus</i> (Lynch, Ruiz-Carranza & Ardila-Robayo, 1994)	LC			NT	Bu, Dar	RFPN de los rios San Cipriano y Escalerete, PNN Farallones de Cali
<i>Pristimantis latidiscus</i> (Boulenger, 1898)	LC			LC	Bu, Dar	RFPN de los rios San Cipriano y Escalerete, RFPN Anchicaya, DMI La Plata
<i>Pristimantis molybri-gnus</i> (Lynch, 1986)	NT		NT	VU, B2ab(iii)	Cal, Da, Dar, Yo	RFPN Anchicaya, RFPN de Cali, RFPN del Bosque de Yotoco

TAXON	IUCN	Red book of Colombia	Red Book of Valle del Cauca	Categorization for the departament	Municipality	Protected area
<i>Pristimantis moro</i> (Savage, 1965)	LC			VU, B2ab(iii)	Bu	RFPN Anchicaya, PNR La sierpe
<i>Pristimantis myops</i> (Lynch, 1998)	DD			VU, B2ab(iii)	Cal, Cai, Da	PNN Farallones de Cali
<i>Pristimantis obmutescens</i> (Lynch, 1980)	LC			VU, B2ab(iii)	Fl, Gi, Tu	RFPR Frayle-Desbaratado, RFPN de sonso-guabas
<i>Pristimantis orpacobates</i> (Lynch, Ruiz-Carranza & Ardila-Robayo, 1994)	VU		VU	VU, B1ab(iii)	Cal, Cu, Dar, Yo	RFPR Bitaco, RFPN de Cali, RFPN del Bosque de Yotoco
<i>Pristimantis palmeri</i> (Boulenger, 1912)	LC			LC	Cal, Cai, Cu, Da, Dar, Yo, Yu	PNN Farallones de Cali, RFPR Bitaco, RFPN de Cali, RFPN del Bosque de Yotoco, RFPN Cerro Dapa - Carisucio
<i>Pristimantis peraticus</i> (Lynch, 1980)	LC			VU, B1ab(iii)	Ce, Fl, Pa	RFPN Amaime, RFPR Frayle-Desbaratado
<i>Pristimantis permixtus</i> (Lynch, Ruiz-Carranza & Ardila-Robayo, 1994)	LC			NT	Ce, Cu, Fl, Pa	RFPR Bitaco, RFPR Frayle-Desbaratado
<i>Pristimantis phalarus</i> (Lynch, 1998)	VU		VU	VU, B1ab(iii)	Cai	
<i>Pristimantis piceus</i> (Lynch, Ruiz-Carranza & Ardila-Robayo, 1996)	LC			VU, B1ab(iii)	Ce, Fl, Pa	RFPN Amaime, RFPR Frayle-Desbaratado
<i>Pristimantis platychilus</i> (Lynch, 1996)	VU		VU	VU, B1ab(iii)	Cal, Da	RFPN de Cali, RFPN Anchicaya, RFPR Bitaco
<i>Pristimantis ptochus</i> (Lynch, 1998)	DD			DD	Cal, Cai	PNN Farallones de Cali
<i>Pristimantis quantus</i> (Lynch, 1998)	VU		VU	VU, B1ab(iii)	Cai	
<i>Pristimantis quicato</i> (Ospina-Sarria, Mendez-Narvaez, Burbano-Yandi & Bolivar-Garcia, 2011)	-			DD (†)	Pa	PNN Las hermosas
<i>Pristimantis racemus</i> (Lynch, 1980)	LC			VU, B1ab(iii)	Ce, Gi, Pa, Tu	RFPN de sonso-guabas
<i>Pristimantis restrepoi</i> (Lynch, 1996)	LC			VU, B1ab(iii)	Cai	
<i>Pristimantis ridens</i> (Cope, 1866)	LC			NT	Bu, Dar	PNR La sierpe, RFPN Anchicaya
<i>Pristimantis roseus</i> (Boulenger, 1918)	NT		NT	VU, B2ab(iii)	Bu, Da, Dar	PNR La sierpe, RFPN Anchicaya, RFPN de los rios San Cipriano y Escalerete
<i>Pristimantis sanguineus</i> (Lynch, 1998)	NT			DD	Bu	
<i>Pristimantis silverstonei</i> (Lynch & Ruiz-Carranza, 1996)	NT		NT	VU, B2ab(iii)	Cai, Da	PNN Farallones de Cali, PNR Paramo del Duende

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<i>Pristimantis simoteriscus</i> (Lynch, Ruiz-Carranza & Ardila-Robayo 1996)	EN		EN	EN, B2ab(iii)	Gi, Tu	RFPN de sonso-guabas
<i>Pristimantis supernatis</i> (Lynch, 1979)	VU		VU	VU, B2ab(iii)	Ce, Gi, Pa, Tu	RFPN de sonso-guabas
<i>Pristimantis taeniatus</i> (Boulenger, 1912)	LC			VU, B2ab(iii)	Bu	DMI La Plata
<i>Pristimantis thectopternus</i> (Lynch, 1975)	LC			VU, A1ace	Cal, Cu, Da, Dar, Fl, Pa, Tr	RFPN de Cali, RFPR Bitaco, RFPN Anchicaya
<i>Pristimantis uranobates</i> (Lynch, 1991)	LC			EN, B2ab(iii)	Ce, Pa	RFPN de Amaime
<i>Pristimantis viridicans</i> (Lynch 1977)	EN		VU	CR, A1ace	Cal, Cu	PNN Farallones de Cali, RFPR Bitaco
<i>Pristimantis w-nigrum</i> (Böettger, 1892)	LC		LC	NT	Cal, Cu, Tr, Yo	PNN Farallones de Cali, RFPR Bitaco, RFPN de Cali, RFPN del Bosque de Yotoco
<i>Pristimantis xeniolum</i> (Lynch, 2001)	DD			DD (†)	Tr	PNR Páramo el Duende
<i>Pristimantis xylochobates</i> (Lynch & Ruiz-Carranza, 1996)	VU		VU	EN, A1ace	Cal, Cai	PNN Farallones de Cali
<i>Strabomantis anatipes</i> (Lynch and Myers, 1983)	VU		VU	CR, A1ace	Da	RFPN Anchicaya
<i>Strabomantis anomalus</i> (Boulenger, 1898)	LC			LC	Bu, Da, Dar	RFPN Anchicaya
<i>Strabomantis bufoniformis</i> (Boulenger, 1896)	LC			VU, A1ace	Bu, Dar	PNN Farallones de Cali, RFPR Anchicaya
<i>Strabomantis cerastes</i> (Lynch, 1975)	LC			VU, A1ace	Cal, Cai, Da, Yo	RFPN de Cali, RFPN del Bosque de Yotoco
<i>Strabomantis cheirolethus</i> (Lynch, 1990)	VU		VU	VU, A1ace	Bu, Cai, Da	PNN Farallones de Cali.
<i>Strabomantis ruizi</i> (Lynch, 1981)	EN	EN	EN	VU, A1ace (†)	Cal, Cu, Da, Tr, Yo	RFPR Bitaco, PNN Farallones de Cali, RFPN del Bosque de Yotoco
<i>Strabomantis zygodactylus</i> (Lynch and Myers, 1983)	LC			NT	Bu, Dar	RFPN de los rios San Cipriano y Escalerete RFPN Anchicaya
FAMILIA DENDROBATIDAE						
<i>Andinobates bombetes</i> (Myers & Daly, 1980)	EN	VU	EN	VU, B1ab(iii)	Cal, Cai, Cu, Da, Dar, To, Yo	RFPN Anchicaya, RFPN de Cali, RFPN Bosque de Yotoco, RFPR Bitaco, DMI Enclave subxerofítico de Atuncela
<i>Andinobates fulguritus</i> (Silverstone, 1975)	LC		NT	VU, B1ab(iii)	Bu	RFPN de los rios San Cipriano y Escalerete, RFPN Anchicaya, PNR La Sierpe
<i>Andinobates minutus</i> (Shreve, 1935)	LC			LC	Bu, Dar	PNN Uramba-Bahia Malaga, RFPN de los rios San Cipriano y Escalerete, RFPN Anchicaya, PNR La Sierpe, DMI La plata

TAXON	IUCN	Red book of Colombia	Red Book of Valle del Cauca	Categorization for the departament	Municipality	Protected area
<i>Andinobates viridis</i> (Myers & Daly, 1976)	VU	EN	VU	EN, A1acde (†)	Bu	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya
<i>Colostethus agilis</i> (Lynch & Ruiz-Carranza, 1985)	NT		NT	EN, B2ab(iii)	Cal, Cai, Da	PNN Farallones de Cali, RFPN Anchicaya
<i>Colostethus brachistriatus</i> (Rivero & Serna, 1986)	DD			VU, A1ace	Fl, Pa, Tu	PNN Las Hermosas, RFPR Frayle-Desbaratado
<i>Colostethus fraterdanieli</i> (Silverstone, 1971)	NT			NT	Bug, Cal, Cu, Da, Fl, Ri, Tu, Yo	PNN Farallones de Cali, RFPN Anchicaya, RFPN Bosque de Yotoco, RFN de Tulua, RN Laguna de Sonso
<i>Epipedobates boulengeri</i> (Barbour, 1909)	LC			LC	Bu	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya, DMI La plata
<i>Hyloxalus abditaurens</i> (Silverstone, 1975)	LC			VU, B2ab(iii)	Cal, Cai, Da, Dar	PNN Farallones de Cali, RFPN Anchicaya
<i>Hyloxalus chocoensis</i> (Boulenger, 1912)	DD			EN, B2ab(iii)	Da, Dar	RFPN Anchicaya
<i>Hyloxalus fascianigrus</i> (Grant & Castro-Herrera, 1998)	NT		NT	VU, B2ab(iii)	Cal, Cu, Da, Dar, Yo	RFPN Anchicaya, RFPN Bosque de Yotoco, RFPN de Cali, PNR Páramo El Duende, RFPR Bitaco, RFPR Frayle-Desbaratado
<i>Hyloxalus lehmanni</i> (Silverstone, 1971)	NT		NT	VU, A1ace	Bug, Cal, Cai, Cu, Tu	PNN Farallones de Cali, RFPN Anchicaya, RFPR Bitaco, RFN de Amaime
<i>Oophaga histrionica</i> (Berthold, 1845)	LC		VU	VU, A1acde (†)	Bu, Da, Dar	RFPN Anchicaya, RFPN Dagua
<i>Oophaga lehmanni</i> (Myers & Daly, 1976)	CR	CR	CR	CR, A2acde	Bu, Da	RFPN Anchicaya
<i>Phyllobates bicolor</i> (Duméril & Bibron, 1841)	NT		NT	EN, A1acde	Bu, Cai	
<i>Phyllobates cf. aurotaenia</i> (Boulenger, 1913)	NT		NT	EN, A2acde	Bu	RFPN Anchicaya
<i>Phyllobates terribilis</i> (Myers, Daly & Malkin, 1978)	EN	CR		CR, B1ab(iii)	Bu	
<i>Silverstoneia nubicola</i> (Dunn, 1924)	NT		NT	NT	Bu, Dar	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya
FAMILIA ELEUTHERODACTYLIDAE						
<i>Diasporus tinker</i> (Lynch, 2001)	LC			LC	Bu, Dar	PNR La sierpe, DMI La Plata, RFPN Anchicaya, RFPN de los rios San Cipriano y Escalere

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<i>Diasporus gularis</i> (Boulenger, 1898)	LC			LC	Bu, Da, Dar	DMI La Plata, RFPN Anchicaya, PNN Uramba Bahia Malaga, RFPN de los rios San Cipriano y Escalerete
<i>Diasporus quidditus</i> (Lynch, 2001)	LC			DD	Bu, Dar	
<i>Eleutherodactylus johnstonei</i> (Barbour, 1914)	LC			LC	Cal, Ja, Yu	
FAMILIA HEMIPHRACTIDAE						
<i>Gastrotheca angustifrons</i> (Boulenger, 1898)	VU			CR, A1ace	Dar	
<i>Gastrotheca antomia</i> (Ruiz-Carranza, Ardila-Robayo, Lynch & Restrepo, 1997)	VU		VU	CR, A1ace	Cal, Cai, Cu, Da	RFPN de Cali, RFPN Anchicaya, RFPR Bitaco
<i>Gastrotheca argenteovirens</i> (Böettger, 1892)	LC			EN, A1ace	Ce, Pa, Tu	PNN Las hermosas, RFN de Amaime
<i>Gastrotheca cornuta</i> (Boulenger, 1898)	EN		VU	EN, A1ace	Bu	RFPN Anchicaya, RFPN de los rios San Cipriano y Escalerete
<i>Gastrotheca dendronastes</i> (Duellman, 1983)	VU		VU	CR, A1ace	Cal, Cai, Da, Dar, Yo	RFPN Anchicaya, PNN Farallones de Cali, RFPN del Bosque de Yotoco
<i>Hemiphractus fasciatus</i> (Peters, 1862)	NT		EN	EN, B2ab(iii)	Bu, Dar	
FAMILIA HYLIDAE						
<i>Agalychnis psilopygion</i> (Cannatella, 1980)	DD			EN, B2ab(iii)	Bu, Dar	RFPN Anchicaya
<i>Agalychnis spurrelli</i> (Boulenger, 1913)	LC			NT	Bu, Dar	PNN Farallones de Cali, RFPN Anchicaya
<i>Cruziohyla calcarifer</i> (Boulenger, 1902)	LC			VU, A2acde	Bu, Dar	RFPN Anchicaya
<i>Dendropsophus columbianus</i> (Böettger, 1892)	LC			LC	Al, An, Ans, Ar, Bo, Bug, Bul, Ca, Cal, Can, Car, Da, Dar, Do, Cai, Ce, Ag, Fl, Gi, Gu, Ja, Cu, Vi, Un, Ob, Pa, Pr, Re, Ri, Ro, Sp, Se, To, Tr, Tu, Ul, Ve, Vij, Yo, Yu, Za	RFPN Cerro Dapa - Carisucio, PNN Tatama, PNN Farallones de Cali, PNN Las Hermosas, RFPR Bitaco, RFPN de Amaime, RFPN de Cali
<i>Dendropsophus ebracatus</i> (Cope, 1874)	LC			VU, B2ab(iii)	Bu	RFPN de los rios San Cipriano y Escalerete
<i>Dendropsophus microcephalus</i> (Boulenger, 1898)	LC			EN, B2ab(iii)	Bu	RFPN de los rios San Cipriano y Escalerete
<i>Hyloscirtus alytolylax</i> (Duellman, 1972)	NT		NT	EN, B2ab(iii)	Cal, Cai, Cu, Da	RFPR BITACO, RFPN Anchicaya, RFPN de Cali

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<i>Hyloscirtus larinopygion</i> (Duellman, 1973)	NT		NT	VU, A1ace	Cal, Cai, Ce, Cu, Da, Fl, Ri	RFPN Bitaco, PNN Farallones de Cali, RFPN Anchicaya, RFPN de Cali, RFPN de Amaime
<i>Hyloscirtus palmeri</i> (Boulenger 1908)	LC			NT	Bu, Da, Dar	PNN Farallones de Cali, RFPN Anchicaya
<i>Hyloscirtus simmonsii</i> (Duellman, 1989)	EN		EN	CR, B1ab(iii)	Dar	
<i>Hypsiboas boans</i> (Linnaeus, 1758)	LC			NT	Bu, Da, Dar	DMI La Plata, RFPN Anchicaya, RFPN de los rios San Cipriano y Escalerete
<i>Hypsiboas pellucens</i> (Werner, 1901)	LC			VU, B2ab(iii)	Bu	RFPN Anchicaya
<i>Hypsiboas picturatus</i> (Boulenger, 1899)	LC			LC	Bu, Dar	PNR La sierpe, DMI La Plata, RFPN Anchicaya, RFPN de los rios San Cipriano y Escalerete
<i>Hypsiboas pugnax</i> (Schmidt, 1857)	LC			LC	Bu, Car, Ja, Rol	RFPN Anchicaya
<i>Hypsiboas rosenbergi</i> (Boulenger, 1898)	LC			LC	Bu, Dar	RFPN Anchicaya, RFPN de los rios San Cipriano y Escalerete
<i>Hypsiboas rubracyllus</i> (Cochran & Goin, 1970)	LC			VU, B1ab(iii)	Bu	PNR La sierpe, RFPN Anchicaya
<i>Scinax elaeochroa</i> (Cope, 1875)	LC			VU, B2ab(iii)	Bu	RFPN de los rios San Cipriano y Escalerete
<i>Scinax ruber</i> (Laurenti, 1768) (sensu latu)	LC			LC	Bu, Ja	RFPN Anchicaya
<i>Scinax sugillatus</i> (Duellman, 1973)	LC			EN, B2ab(iii)	Bu	RFPN Anchicaya
<i>Smilisca phaeota</i> (Cope, 1862)	LC			LC	Bu, Dar	PNR La sierpe, PNN Farallones de Cali, DMI La Plata, RFPN Anchicaya, RFPN de los rios San Cipriano y Escalerete
FAMILIA LEPTODACTYLIDAE						
<i>Leptodactylus colombiensis</i> (Heyer, 1994)	LC			LC	An, Ans, Bo, Bug, Bul, Cal, Can, Ce, Fl, Gu, Ja, Ob, Pa, Un, Ri, Ro, Sp, To, Tr, Tu, Vi, Vij, Yo, Yu, Za	RNR Laguna de Sonso
<i>Leptodactylus fragilis</i> (Brocchi, 1877)	LC			LC	An, Bug, Cal, Ja, Yu	RNR Laguna de Sonso
<i>Leptodactylus melanotus</i> (Hallowell, 1861)	LC			LC	Bu	RFPN Anchicaya, PNR La Sierpe
<i>Leptodactylus rhodomerus</i> (Heyer, 2005)	LC			LC	Bu, Dar	RFPN de los rios Escalerete y San Cipriano, RFPN Anchicaya, DMI La Plata

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<i>Leptodactylus ventrimaculatus</i> (Boulenger, 1902)	LC			NT	Bu, Dar	
<i>Leptodactylus wagneri</i> (Peters, 1862)	LC			NT	Bu	
FAMILIA MICROHYLIDAE						
<i>Nelsonophryne aterrima</i> (Günther, 1900)	LC			EN, B2ab(iii)	Dar	
FAMILIA RANIDAE						
<i>Lithobates catesbeiana</i> (Shaw, 1802)	LC			LC	Bug, Gi, Pa, Ri, Ro, Tu, Yo	RN Laguna de Sonso
<i>Lithobates vaillanti</i> (Brocchi, 1877)	LC			LC	Bu	RFPN de los rios Escalerete y San Cipriano, RFPN Anchicaya
ORDEN CAUDATA						
FAMILIA PLETHODONTIDAE						
<i>Bolitoglossa biseriata</i> (Tanner, 1962)	LC			NT	Bu, Da	RFPN de los rios Escalerete y San Cipriano, RFPN Anchicaya
<i>Bolitoglossa walkeri</i> (Brame & Wake, 1972)	NT		NT	VU, B2ab(iii)	Cal, Cai, Cu	RFPN de Cali, RFPR Bitaco
<i>Bolitoglossa hiemalis</i> (Lynch, 2001)	DD		DD	CR, B2ab(iii)(†)	Tr	PNR Páramo El Duende
<i>Bolitoglossa valleculea</i> (Brame & Wake, 1963)	VU			EN, B2ab(iii)	Cai	RFPN Anchicaya
<i>Bolitoglossa silverstonei</i> (Brame & Wake, 1972)	LC			DD	Bu	
<i>Oedipina parvipes</i> (Peters, 1879)	LC			DD	Bu	RFPN Anchicaya
ORDEN GYMNOPIHIONA						
FAMILIA CAECILIIDAE						
<i>Caecilia guntheri</i> (Dunn, 1942)	DD			DD	Cai	
<i>Caecilia leucocephala</i> (Taylor, 1968)	LC			DD	Bu	RFPN Anchicaya
<i>Caecilia nigricans</i> (Boulenger, 1902)	LC			DD	Bu	RFPN de los rios San Cipriano y Escalerete
<i>Caecilia occidentalis</i> (Taylor, 1968)	DD			DD	Cal, Da	PNN Farallones de Cali
<i>Caecilia orientalis</i> (Taylor, 1968)	LC			DD	Se	
<i>Caecilia perdita</i> (Taylor, 1968)	LC			DD	Bu	RFPN Anchicaya, RFPR Bitaco
<i>Caecilia subdermalis</i> (Taylor, 1968)	LC			DD	Cu, Da, Ja	
<i>Caecilia subnigricans</i> (Dunn, 1942)	LC			DD	Re	RFPN de los rios San Cipriano y Escalerete
<i>Caecilia cf. tentaculata</i> (Linnaeus, 1749)	LC			DD	Bu, Re	
<i>Oscacaecilia polyzona</i> (Fisher, 1880)	DD			DD	Bu	PNR La sierpe

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FAMILIA RHINATREMATIDAE						
<i>Epicrionops bicolor</i> (Boulenger, 1883)	LC			NT	Bo, Cu, Da	RFPR Bitaco,PNN Farrallones de Cali
FAMILIA TYPHLONECTIDAE						
<i>Typhlonectes natans</i> (Fisher, 1880)	LC			NT	An, Ans, Bo, Bug, Bul, Cal, Can, Car, Fl, Gu, Ja, Un, Vi, Ob, Ri, Ro, Sp, To, Tr, Tu, Vij, Yo, Yu, Za	
CLASS REPTILIA						
ORDEN CROCODYLIA						
FAMILIA ALLIGATORIDAE						
<i>Caiman crocodilus</i> (Linnaeus, 1758)	LC	LC		LC	Bu, Bug	RN Laguna de sonso
FAMILIA CROCODYLIDAE						
<i>Crocodylus acutus</i> (Cuvier, 1807)	VU	CR		VU, A1acd	Bu	
ORDEN SQUAMATA						
SUBORDEN AMPHISBAENIA						
FAMILIA AMPHISBAENIDAE						
<i>Amphisbaena fuliginosa</i> (Linnaeus, 1758)	NE			NT	Bu	RFPN Anchicaya
SUBORDEN SAURIA						
INFRAORDEN IGUANIA						
FAMILIA CORYTOPHANIDAE						
<i>Basiliscus basiliscus</i> (Linnaeus, 1768)	NE			NT	Bu, Bug, Ja, Pa, Yu	RFPN Anchicaya, RNR Laguna de Sonso
<i>Basiliscus galeritus</i> (Duméril, 1851)	NE			NT	Bu, Da	PNN Uramba-Bahia Malaga, RFPN Anchicaya
FAMILIA DACTYLOIDAE						
<i>Anolis agassizi</i> (Stejneger, 1900)	NE			CR, B2ab(iii)(†)	Bu	SFF Isla Malpelo
<i>Anolis anchicayae</i> (Poe, Velasco, Miyata & Williams, 2009)	NE			VU, B2ab(iii)	Bu, Dar	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya
<i>Anolis antonii</i> (Boulenger, 1908)	NE			LC	Cal, Cai, Cu, Ce, Da, Yo	PNN Farallones de Cali, RFPN Anchicaya, RFPN de Cali, RFPN Bosque de Yotoco, RFPR Bitaco
<i>Anolis auratus</i> (Daudin, 1802)	NE			LC	Bu, Bug, Cal, Ce, Ja, Pa, Yu	PNN Farallones de Cali
<i>Anolis biporcatus</i> (Wiegmann, 1834)	NE			VU, B2ab(iii)	Bu	
<i>Anolis calimae</i> (Ayala, Harris & Williams, 1983)	NE			VU, B2ab(iii)	Cal, Da, Vi	PNN Farallones de Cali
<i>Anolis chloris</i> (Boulenger, 1898)	NE			VU, B2ab(iii)	Bu	RFPN Anchicaya

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<i>Anolis chocorum</i> (Williams & Duellman, 1967)	NE			VU, A2ac	Bu	RFPN de los rios San Cipriano y Escalere-te, RFPN Anchicaya
<i>Anolis eulaemus</i> (Boulenger, 1908)	LC			VU, A2ac	Cal, Cu, Vi	PNN Farallones de Cali, RFPR Bitaco
<i>Anolis fraseri</i> (Günther, 1859)	LC			VU, B2ab(iii)	Cal, Da, Yo	PNN Farallones de Cali, RFPN Anchicaya, RFPN Bosque de Yotoco
<i>Anolis gracilipes</i> (Boulenger, 1898)	NE			EN, B2ab(iii)	Bu	RFPN Anchicaya
<i>Anolis granuliceps</i> (Boulenger, 1898)	LC			VU, B2ab(iii)	Bu, Da	RFPN Anchicaya
<i>Anolis heterodermus</i> (Duméril, 1851)	NE			VU, B2ab(iii)	Cal, Cai, Cu, Da	RFPN Anchicaya, RFPR Bitaco
<i>Anolis latifrons</i> (Berthold, 1846)	NE			NT	Bu	
<i>Anolis lyra</i> (Poe, Velasco, Miyata & Williams, 2009)	NE			VU, B2ab(iii)	Bu, Dar	
<i>Anolis macrolepis</i> (Boulenger, 1911)	NE			NT	Bu	RFPN Anchicaya
<i>Anolis maculiventris</i> (Boulenger, 1898)	NE			NT	Bu	RFPN Anchicaya
<i>Anolis mirus</i> (Williams, 1963)	NE			CR, B1ab(iii)	Bu	RFPN de los rios San Cipriano y Escalere-te, RFPN Anchicaya
<i>Anolis notopholis</i> (Boulenger, 1896)	NE			NT	Bu, Da, Dar	RFPN Anchicaya
<i>Anolis propinquus</i> (Williams, 1984)	NE			CR, B1ab(iii)	Da, Dar	RFPN Anchicaya
<i>Anolis rivalis</i> (Williams, 1984)	NE			DD	Bu	
<i>Anolis ventrimaculatus</i> (Boulenger, 1911)	NT			LC	Cal, Cai, Cu, Da	PNN Farallones de Cali, RFPN Anchicaya, RFPN de Cali, RFPR Bitaco
FAMILIA HOPLOCERCIDAE						
<i>Enyalioides heterolepis</i> (Bocourt, 1874)	NE			NT	Bu, Da	RFPN Anchicaya
<i>Enyalioides oshaughnessyi</i> (Boulenger, 1881)	NE			DD	Bu	
FAMILIA IGUANIDAE						
<i>Iguana iguana</i> (Linnaeus, 1758)	NE			LC	Bu, Bug, Cal, Can, Ce, Cu, Da, Gu, Ja, Pa, Sp, Vi, Vij, Yu	RFPN de los rios Escalere-te y San Cipriano, RN Laguna de Sonso
FAMILIA POLYCHROTIDAE						
<i>Polychrus gutturosus</i> (Berthold, 1846)	NE			EN, A2ac	Bu, Dar	RFPN de los rios San Cipriano y Escalere-te

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INFRAORDEN GEKKOTA						
FAMILIA GEKKONIDAE						
<i>Hemidactylus brookii</i> (Gray, 1845)	NE			LC	An, Bu, Bul, Cal, Can, Gu, Ja, Ob, Pa, Yu	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya
<i>Hemidactylus frenatus</i> (Schlegel, 1836)	LC			LC	An	
<i>Lepidodactylus lugubris</i> (Duméril & Bibron, 1836)	NE			LC	Bu, Cal, Yu	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya
FAMILIA PHYLLODACTYLIDAE						
<i>Phyllodactylus transversalis</i> (Huey, 1935)	NE			CR, B2ab(iii)(†)	Bu	SFF Isla Malpelo
<i>Thecadactylus rapicauda</i> (Houttuyn, 1782)	NE			LC	Bu, Dar	RFPN de los rios San Cipriano y Escalere
FAMILIA SPHAERODACTYLIDAE						
<i>Gonatodes albogularis</i> (Duméril & Bibron, 1836)	NE			LC	Bu, Bug, Cal, Cu, Ja, Pa, To, Tu, Vi, Vij, Yo, Yu, Za	RN Laguna de Sonso
<i>Lepidoblepharis duolepis</i> (Ayala & Castro, 1983)	NE			NT	Cal, Tr, Yo	RFPN Bosque de Yotoco, RFPN de Cali
<i>Lepidoblepharis intermedius</i> (Boulenger, 1914)	NE			VU, B2ab(iii)	Bu	RFPN Anchicaya
<i>Lepidoblepharis microlepis</i> (Noble, 1923)	NE			VU, B2ab(iii)	Bu	
<i>Lepidoblepharis peraccae</i> (Boulenger, 1908)	NE			VU, B2ab(iii)	Bu	RFPN Anchicaya
INFRAORDEN SCINCOMORPHA						
FAMILIA GYMNOPTHALMIDAE						
<i>Alopoglossus festae</i> (Peracca, 1904)	NE			EN, B2ab(iii)	Bu, Dar	RFPN de los rios San Cipriano y Escalere
<i>Alopoglossus lehmanni</i> (Ayala & Harris, 1984)	NE			EN, B2ab(iii)	Bu, Dar	
<i>Anadia vittata</i> (Boulenger, 1913)	NE			VU, B2ab(iii)	Bu	PNN Farallones de Cali, RFPN Anchicaya
<i>Cercosaura argulus</i> (Peters, 1863)	LC			NT	Cal, Da, Fl, Pa, Yo	PNN Farallones de Cali, PNN Las hermosas, RFPN Anchicaya, RFPN Bosque de Yotoco, RFPR Frayle-Desbaratado
<i>Cercosaura vertebralis</i> (O'Shaughnessy, 1879)	NE			LC	Cal, Cai, Cu, Da, To, Tr	PNN Farallones de Cali, RFPN Anchicaya, RFPN de Cali, RFPR Bitaco
<i>Echinosaura horrida</i> (Boulenger, 1890)	NE			NT	Bu	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya

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<i>Echinosaura orcesi</i> (Fritts, Almendáriz & Samec, 2002)	NE			VU, B2ab(iii)	Bu	RFPN Anchicaya
<i>Gymnophthalmus speciosus</i> (Hallowell, 1861)	NE			DD	Bug, Ja, Ro, Yu	
<i>Leposoma southi</i> (Ruthven & Gaige, 1924)	NE			NT	Bu	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya
<i>Ptychoglossus stenolepis</i> (Boulenger, 1908)	LC			NT	Cai, Da, Tr, Yo	RFPN Anchicaya
<i>Ptychoglossus vallen-sis</i> (Harris, 1994)	NE			DD	Cal	RFPN de Cali
<i>Riama columbiana</i> (Andersson, 1914)	NE			VU, A2acd	Cal, Cai, Tu	PNN Farallones de Cali, RFPN de Tulua
<i>Riama laevis</i> (Boulenger, 1908)	NE			EN, A2acd	Cai, Cu	RFPR Bitaco
<i>Riama striata</i> (Peters, 1863)	NE			DD	Cal	PNN Farallones de Cali
FAMILIA TEIIDAE						
<i>Ameiva ameiva</i> (Linnaeus, 1758)	NE			VU, B2ab(iii)	Cal, Ja, Pa	
<i>Cnemidophorus lemniscatus</i> (Linnaeus, 1758)	NE			LC	Bug, Cal, Ja, Pa, Vij, Yo, Yu	RN Laguna de Sonso
<i>Holcosus anomalus</i> (Echternacht, 1977)	NE			NT	Bu, Da, Dar	RFPN de los rios San Cipriano y Escalere, RFPN Anchicaya
FAMILIA SCINCIDAE						
<i>Mabuya</i> sp. (<i>sensu latu</i>)	NE			VU, B2ab(iii)	Bu, Cal	PNN Farallones de Cali, RFPN de Cali
INFRAORDEN DIPLOGLOSSA						
FAMILIA ANGUIDAE						
<i>Diploglossus millepunctatus</i> (O'Shaughnessy, 1874)	NE			CR, B1ab(iii)(†)	Bu	SFF Isla Malpelo
<i>Diploglossus monotropis</i> (Kuhl, 1820)	NE			VU, B2ab(iii)	Bu, Dar	RFPN Anchicaya
SUBORDEN SERPENTES						
FAMILIA BOIDAE						
<i>Boa constrictor</i> (Linnaeus, 1758)	NE			VU, A2acd	Bu	RFPN Anchicaya
<i>Corallus annulatus</i> (Cope, 1876)	NE			EN, B1ab(iii)	Bu	
FAMILIA COLUBRIDAE						
<i>Chironius carinatus</i> (Linnaeus, 1758)	NE			NT	Bu, Cal	PNN Farallones de Cali, RFPN de Cali
<i>Chironius grandisquamis</i> (Peters, 1868)	NE			NT	Bu	RFPN Anchicaya, PNR La Sierpe, RFPN de los rios Escalere y San Cipriano

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<i>Chironius monticola</i> (Roze, 1952)	NE			NT	Ar, Bo, Cal, Cai, Cu, Da, Do, Tr, Ve, Yo	RFPN del Bosque de Yotoco, PNN Farallones de Cali, RFPN de Cali
<i>Dendrophidion bivittatus</i> (Duméril, Bibron & Duméril, 1854)	NE			NT	Bu, Bug, Cal, Cu, Da, Yo	PNN Farallones de Cali, RFPN de Cali, RFPN del Bosque de Yotoco, RFPN Anchicaya
<i>Dendrophidion clarkii</i> (Dunn, 1933)	NE			EN, B2ab(iii)	Bu, Dar	PNN Farallones de Cali, RFPN de los rios Escalerete y San Cipriano
<i>Dendrophidion percarnatus</i> (Cope, 1893)	NE			EN, B1ab(iii)	Ar, Bu, Cai, Dar, Do, Ve	RFPN de los rios Escalerete y San Cipriano
<i>Dendrophidion prolixum</i> (Cadle, 2012)	NE			DD	Bu	RFPN Anchicaya
<i>Drymarchon melanurus</i> (Bibron & Duméril 1854)	NE			NT	An, Bu, Cal, Can, Ce, Yo	RFPN Anchicaya, RFPN del Bosque de Yotoco
<i>Drymobius rhombifer</i> (Günther, 1860)	NE			EN, B1ab(iii)	Bu	RFPN Anchicaya; RFPN de los rios Escalerete y San Cipriano
<i>Lampropeltis triangulum</i> (Lacépède, 1789)	NE			LC	Bu, Cal, Cai, Da, Ja, Pa, Tu, Vij, Yu	RFPN de los rios Escalerete y San Cipriano, RFPN Anchicaya, RFPN de Cali, PNN Farallones de Cali, RFPR Bitaco, RFPN Cerro Dapa - Carisucio
<i>Leptophis ahaetulla</i> (Linneaus, 1758)	NE			NT	Bu, Bul, Cal, Pa, Yo	RFPN del Bosque de Yotoco
<i>Leptophis depressirostris</i> (Cope, 1861)	NE			NT	Bu	RFPN de los rios Escalerete y San Cipriano, RFPN Anchicaya
<i>Mastigodryas boddaerti</i> (Sentzen, 1796)	NE			LC	Bu, Cal	RFPN Anchicaya, PNN Farallones de Cali, RFPN de los rios Escalerete y San Cipriano, DMI La Plata, PNN Uramba Bahia Malaga, PNR La sierpe, RFPN de Cali
<i>Mastigodryas danieli</i> (Amaral, 1935)	NE			NT	Cal, Cu, Pa	RFPN de Cali, PNN Farallones de Cali, PNN Las hermosas
<i>Mastigodryas pleei</i> (Duméril, Bibron & Duméril, 1854)	NE			NT	Bug, Cal, Cu, Da, Gu, Ja, Pa, Re, Ro, Se, Tu, Vi, Vij, Yo, Yu	PNN Farallones de Cali
<i>Mastigodryas pulchriiceps</i> (Cope, 1868)	NE			NT	Bu, Cal	RFPN Anchicaya, RFPN de Cali, RFPN de los rios Escalerete y San Cipriano

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<i>Oxybelis aeneus</i> (Wagler, 1824)	NE			LC	Al, An, Ans, Ar, Bo, Bu, Bug, Bul, Ca, Cal, Can, Car, Da, Dar, Do, Cai, Ce, Ag, Fl, Gi, Gu, Ja, Cu, Vi, Un, Ob, Pa, Pr, Re, Ri, Ro, Sp, Se, To, Tr, Tu, Ul, Ve, Vij, Yo, Yu, Za	RFPN Anchicaya, PNN Farallones de Cali, PNN Las hermosas, RFPN de los rios Escalerete y San Cipriano, DMI La Plata, PNN Uramba Bahia Malaga, PNR La sierpe, RN Laguna de sonso, RFPN de Cali, RFPN Dagua, DMI Enclave subxerofitico de Atuncela, PNR Paramo el Duende, PNN Tatama, RFPN Amaime, RFPR Bitaco, RFPN Cerro Dapa - Carisucio
<i>Oxybelis brevirostris</i> (Cope, 1861)	NE			LC	Bu, Da	DMI La Plata, RFPN Anchicaya, PNN Farallones de Cali
<i>Pliocercus euryzonus</i> Cope, 1862	LC			VU, B2ab(iii)	Bu, Da, Dar	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, PNN Farallones de Cali
<i>Pseustes poecilonotus</i> (Günther, 1858)	LC			VU, B2ab(iii)	Bu	RFPN Anchicaya, PNN Farallones de Cali
<i>Pseustes shropshirei</i> (Barbour & Amaral, 1924)	NE			VU, B2ab(iii)	Bu	RFPN Anchicaya, PNR La sierpe
<i>Rhinobothryum bovallii</i> (Anderson, 1916)	NE			EN, B1ab(iii)	Bu	RFPN Anchicaya, PNR La sierpe
<i>Spilotes pullatus</i> (Linnaeus, 1758)	NE			LC	Al, An, Ans, Ar, Bo, Bu, Bug, Bul, Ca, Cal, Can, Car, Da, Dar, Do, Cai, Ce, Ag, Fl, Gi, Gu, Ja, Cu, Vi, Un, Ob, Pa, Pr, Re, Ri, Ro, Sp, Se, To, Tr, Tu, Ul, Ve, Vij, Yo, Yu, Za	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, RFPN de Cali, RFPN del Bosque de Yotoco, RFPN Dagua, RFPN de Amaime, RFPN de sonso-guabas, RFPR Bitaco, RFPN Cerro Dapa - Carisucio, RN Laguna de sonso, PNR La sierpe, DMI La Plata, DMI Enclave subxerofitico de Atuncela, PNR Paramo el Duende, PNN Tatama, PNN Farallones de Cali, PNN las hermosas, PNN Uramba-Bahia Malaga
<i>Stenorrina degenhardtii</i> (Berthold, 1845)	NE			NT	Bu, Dar	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, DMI La Plata

TAXON	IUCN	Red book of Colombia	Red Book of Valle del Cauca	Categorization for the departament	Municipality	Protected area
<i>Tantilla melanocephala</i> (Linnaeus, 1758) (<i>sensu latu</i>)	NE			LC	Al, An, Ans, Ar, Bo, Bu, Bug, Bul, Ca, Cal, Can, Car, Da, Dar, Do, Cai, Ce, Ag, Fl, Gi, Gu, Ja, Cu, Vi, Un, Ob, Pa, Pr, Re, Ri, Ro, Sp, Se, To, Tr, Tu, Ul, Ve, Vij, Yo, Yu, Za	RFPN del Bosque de Yotoco, RFPN de Cali, RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, RFPR Bitaco, RFPN Cerro Dapa - Carisucio, RFPN Dagua, RFPN de Amaime, DMI Enclave subxerofitico de Atuncela, RN Laguna de sonso, PNN Tatama, PNN Farallones de Cali
FAMILIA DIPSADIDAE						
<i>Atractus boulengerii</i> (Peracca, 1896)	NE			DD (†)	Bu	RFPN Anchicaya
<i>Atractus clarki</i> (Dunn & Bailey, 1939)	NE			DD	Re	
<i>Atractus lehmanni</i> (Boettger, 1898)	NE			DD	Cal, Cu, Da, Se	RFPN Anchicaya, RFPR Bitaco
<i>Atractus melas</i> (Boulenger, 1908)	NE			DD	Bu, Cal, Da	PNN Farallones de Cali, RFPN de Cali
<i>Atractus multicinctus</i> (Jan, 1865)	NE			VU, B2ab(iii)	Bu, Cal, Cu, Da	RFPN de Cali, RFPN Anchicaya
<i>Atractus obesus</i> (Marx, 1960)	NE			DD	Cal, Ce, Fl	PNN Farallones de Cali, PNN las hermosas, RFPR Frayle-Desbaratado
<i>Clelia clelia</i> (Daudin, 1803)	NE			LC	Bu, Cal, Ce, Cu, Da, Yo, Yu	RFPN Anchicaya, RFPN de Cali, RFPN del Bosque de Yotoco, PNN las hermosas
<i>Clelia equatoriana</i> (Amaral, 1924)	NE			EN, B2ab(iii)	Ans, Ar, Bo, Cai, Do, Un, Pr, To, Ve	PNN Las hermosas
<i>Diaphorolepis wagneri</i> (Jan, 1863)	NE			VU, B2ab(iii)	Bu, Cal, Cai, Cu, Da	PNN Farallones de Cali
<i>Dipsas sanctijoannis</i> (Boulenger, 1911)	DD			LC	Bu, Cal, Cu, Da, Yo	RFPN de los rios Escalerete y San Cipriano, PNN Farallones de Cali, RFPN de Cali, RFPN del Bosque de Yotoco
<i>Dipsas temporalis</i> (Werner, 1909)	NE			DD	Bu	RFPN Anchicaya
<i>Erythrolamprus bizonus</i> (Jan, 1863)	LC			LC	Bu, Bug, Cal, Car, Cu, Da, Dar, Fl, Ja, Pa, Un, Yu	RFPN Anchicaya, PNN Farallones de Cali, PNN las hermosas, RFPN de Cali, RFPR Bitaco, RFPN Cerro Dapa - Carisucio, RFPN Dagua
<i>Erythrolamprus epinephelus</i> (Cope, 1862)	NE			NT	Bo, Bu, Bug, Cal, Cai, Da, Tr	RFPN de Cali, RFPN Anchicaya, PNN Farallones de Cali

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<i>Erythrolamprus mimus</i> (Cope, 1868)	NE			VU, B2ab(iii)	Bu, Da	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, PNN Farallones de Cali
<i>Geophis betaniensis</i> (Restrepo & Wright, 1987)	NE			DD (†)	Bo, Da, Ri	
<i>Geophis nigroalbus</i> (Boulenger, 1908)	NE			DD	Bo,Cu, Tr	
<i>Imantodes cenchoa</i> (Linnaeus, 1758)	NE			LC	Al, An, Ans, Ar, Bo, Bu, Bug, Bul, Ca, Cal, Can, Car, Da, Dar, Do, Cai, Ce, Ag, Fl, Gi, Gu, Ja, Cu, Vi, Un, Ob, Pa, Pr, Re, Ri, Ro, Sp, Se, To, Tr, Tu, Ul, Ve, Vij, Yo, Yu, Za	RFPN de los rios Escalerete y San Cipriano, RFPN Anchicaya, PNN Farallones de Cali, DMI La Plata, PNN Uramba Bahia Malaga, PNR La sierpe, RN Laguna de sonso, RFPN de Cali, RFPN Dagua, DMI Enclave subxerofítico de Atuncela, PNR Paramo el Duende, RFPN de Amaime, PNN Tatama, RFPN del Bosque de Yotoco, RFPR Bitaco, RFPN Cerro Dapa - Carisucio
<i>Imantodes inornatus</i> (Boulenger, 1896)	NE			DD	Bu	
<i>Imantodes chocoensis</i> (Torres-Carvajal, Yáñez-Muñoz, Quirola, Smith & Almendáriz, 2012)	LC			DD	Bu	RFPN de los rios Escalerete y San Cipriano
<i>Leptodeira annulata</i> (Linnaeus, 1758)	NE			LC	Al, An, Ans, Ar, Bo, Bu, Bug, Bul, Ca, Cal, Can, Car, Da, Dar, Do, Cai, Ce, Ag, Fl, Gi, Gu, Ja, Cu, Vi, Un, Ob, Pa, Pr, Re, Ri, Ro, Sp, Se, To, Tr, Tu, Ul, Ve, Vij, Yo, Yu, Za	RFPN Anchicaya, PNN Farallones de Cali, RFPN de los rios Escalerete y San Cipriano, DMI La Plata, PNN Uramba Bahia Malaga, PNR La sierpe, RN Laguna de sonso, RFPN de Cali, RFPN Dagua, DMI Enclave subxerofítico de Atuncela, PNN Tatama, RFPN del Bosque de Yotoco, RFPR Bitaco; RFPN Cerro Dapa - Carisucio, RFPN de Amaime
<i>Leptodeira septentrionalis</i> (Kennicott, 1859)	NE			NT	Bu	
<i>Ninia atrata</i> (Hallowell, 1845)	NE			EN, B2ab(iii)	Bu	RFPN Anchicaya
<i>Nothopsis rugosus</i> (Cope, 1871)	NE			EN, B1ab(iii)	Bu	RFPN Anchicaya; RFPN de los rios Escalerete y San Cipriano

TAXON	IUCN	Red book of Colombia	Red Book of Valle del Cauca	Categorization for the departament	Municipality	Protected area
<i>Oxyrhopus petolarius</i> (Linnaeus, 1758)	NE			LC	Al, An, Ans, Ar, Bo, Bu, Bug, Bul, Ca, Cal, Can, Car, Da, Dar, Do, Cai, Ag, Fl, Gi, Gu, Ja, Cu, Vi, Un, Ob, Pa, Pr, Re, Ri, Ro, Sp, Se, To, Tr, Tu, Ul, Ve, Vij, Yo, Yu, Za	RFPN Anchicaya, PNN Farallones de Cali, RFPN de los rios Escalerete y San Cipriano, DMI La Plata, PNN Uramba Bahia Malaga, PNR La sierpe, RN Laguna de sonso, RFPN de Cali, RFPN Dagua, DMI Enclave subxerofitico de Atuncela, PNN Tatama, RFPN del Bosque de Yotoco, RFPR Bitaco, RFN Cerro Dapa - Carisucio
<i>Saphenophis boursieri</i> (Jan, 1867)	NE			VU, B2ab(iii)	Cai	
<i>Saphenophis sneiderni</i> Myers, 1973	NE			VU, B2ab(iii)	Cai	
<i>Saphenophis tristiatus</i> (Rendahl & Vester-gren, 1941)	NE			VU, B2ab(iii)	Cal, Pa	PNN Farallones de Cali, PNN Las hermosas
<i>Sibon nebulata</i> (Linnaeus, 1758)	NE			LC	Al, An, Ans, Ar, Bo, Bu, Bug, Bul, Ca, Cal, Can, Car, Da, Dar, Do, Cai, Ce, Ag, Fl, Gi, Gu, Ja, Cu, Vi, Un, Ob, Pa, Pr, Re, Ri, Ro, Sp, Se, To, Tr, Tu, Ul, Ve, Vij, Yo, Yu, Za	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, RFPN del Bosque de Yotoco, RFPN de Cali, RFPR Bitaco, RFPN Cerro Dapa - Carisucio, PNR La sierpe, RN Laguna de sonso, RFPN Dagua, DMI La Plata, DMI Enclave subxerofitico de Atuncela, PNN Tata-ma, PNN Farallones de Cali, PNN Uramba - BahiaMalaga
<i>Siphlophis compres-sus</i> (Daudin, 1803)	LC			NT	Bu, Dar	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano
<i>Synophis plectoverte-bralis</i> (Sheil & Grant, 2001)	NE			DD (†)	Da	RFPN Anchicaya
<i>Tretanorhinus taenia-tus</i> (Boulenger, 1903)	NE			DD	Bu	RFPN Anchicaya
<i>Urotheca decipiens</i> (Gunter 1893)	NE			NT	Cal, Cu, Da, Yo, Yu	PNN Farallones de Cali, RFPR Bitaco, RFPN Cerro Dapa - Carisucio, RFPN del Bosque de Yotoco
<i>Urotheca fulviceps</i> (Cope, 1886)	NE			DD	Da	RFPN Anchicaya
<i>Urotheca lateristriga</i> (Berthold, 1859)	NE			NT	Bo, Bu, Cal, Da, Cu	RFPN de Cali, RFPN Anchicaya, RFPR Bitaco
<i>Xenodon rabdocephalus</i> (Wied, 1824)	NE			VU, B2ab(iii)	Bu	DMI La Plata, RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano

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FAMILIA ELAPIDAE						
<i>Micrurus ancoralis</i> (Jan, 1872)	NE			NT	Bu	DMI La Plata, RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano
<i>Micrurus clarki</i> (Schmidt, 1936)	NE			DD	Da	RFPN Anchicaya
<i>Micrurus dumerilii</i> (Jan, 1858)	NE			NT	Bu, Da	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, RFPN de Cali; PNR La sierpe, PNN Farallones de Cali
<i>Micrurus mipartitus</i> (Duméril, Bibron & Duméril, 1854)	NE			LC	Bo, Bug, Bu, Cal, Cai, Cu, Da, Dar, Fl, Gu, Ja, Pa, Pr, Ri, Tu, Yo	RFPN del Bosque de Yotoco, RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, RFPN de Cali, RFPR Bitaco, PNR La sierpe, RN Laguna de sonso, PNN Farallones de Cali, PNN Las hermosas
<i>Micrurus multifasciatus</i> (Jan, 1858)	NE			DD	Dar	
<i>Micrurus multiscutatus</i> (Rendahl & Vester-gren, 1940)	DD			DD	Bu, Dar	
FAMILIA LEPTOTYPHLOPIDAE						
<i>Trilepida joshuai</i> (Dunn, 1944)	LC			DD	Bo, Cal, Cai, Da	RFPN de Cali, PNN Farallones de Cali
<i>Trilepida macrolepis</i> (Peters, 1857)	NE			DD	Cal, Dar	RFPN de Cali
FAMILIA TROPIDOPHIIDAE						
<i>Trachyboa boulengeri</i> (Peracca, 1910)	NE			NT	Bu	RFPN de los rios Escalerete y San Cipriano, DMI La Plata
FAMILIA VIPERIDAE						
<i>Bothriechis schlegelii</i> (Berthold, 1846)	NE			NT	Bu, Cal, Cai, Cu, Da, Dar, Fl, Pa, Se, Tr, Yo	RFPN Anchicaya, RFPN del Bosque de Yotoco, RFPR Bitaco, PNN Las hermosas
<i>Bothrocophias myersi</i> (Gutberlet & Campbell, 2001)	LC			VU, A2ac	Bu, Dar	RFPN Anchicaya, PNR La sierpe
<i>Bothrops asper</i> (Gar-man, 1884)	NE			LC	Bu, Cal, Da, Dar, Pa, Yo	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, RFPN del Bosque de Yotoco, DMI Enclave subxe-rofitico de Atuncela, DMI La Plata, RFPN Dagua, RFPN de Cali, PNR La sierpe, PNN Farallones de Cali, PNN Uramba-Bahia Malaga

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<i>Bothrops punctatus</i> (Garcia, 1896)	NE			VU, A2ac	Bu	RFPN de los rios Escalerete y San Cipriano, PNR La sierpe
<i>Bothrops rhombeatus</i> (Garcia, 1896)	NE			VU, B2ab(iii)	Cal, Pa	RFPN de Cali
<i>Lachesis acrochorda</i> (Garcia 1896)	NE			VU, A2ac	Bu	RFPN Anchicaya
<i>Porthidium nasutum</i> (Bocourt, 1868)	LC			VU, A2ac	Bu	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano
ORDEN TESTUDINATA						
SUBORDEN CRYPTODIRA						
FAMILIA CHELYDRIDAE						
<i>Chelydra acutirostris</i> (Peters, 1862)	NE	DD		NT	An, Bu, Bug, Cal, Car, Pa, Yo, Za	RFPN de los rios Escalerete y San Cipriano, RN Laguna de sonso
FAMILIA EMYDIDAE						
<i>Trachemys scripta</i> (Thunberg in Schoepff, 1792)	NE			LC	Bug, Cal	RN Laguna de sonso
FAMILIA GEOEMYDIDAE						
<i>Rhinoclemmys annulata</i> (Gray, 1860)	NT	DD		VU, A2acd	Bu	RFPN de los rios Escalerete y San Cipriano, PNR La sierpe
<i>Rhinoclemmys melanosterna</i> (Gray, 1861)	NE	NT		VU, A2acd	Bu	RFPN Anchicaya, PNR La sierpe
<i>Rhinoclemmys nasuta</i> (Boulenger, 1902)	NT	DD		NT	Bu	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, PNR La sierpe
FAMILIA KINOSTERNIDAE						
<i>Cryptochelys dunni</i> (Schmidt, 1947)	VU	VU		VU, B2ab(iii)	Bu	PNR La sierpe
<i>Cryptochelys leucostomum</i> (Duméril, Bibron & Duméril, 1851)	NE			NT	Bu	RFPN Anchicaya, RFPN de los rios Escalerete y San Cipriano, PNR La sierpe

Considering that recently some taxonomic problems have been resolved, we provide to some species or groups of species, the taxonomic category of *Sensu latu* or cf., understanding that these species could eventually change and give new information for the department.

Table 2. Criteria

Criteria		Score				Percentage			
		0	1	2	3	4	Amphibians	Snakes	Lizards
1	Illegal trade	No ilegal trade	Low trade	median trade	High trade	Unknown	10	5	5
2	Distribution	more than 20 localities	11–20 localities	6–10 localities	2–5 localities	Restricted to only the descriptions	25	20	25
3	Ecorregions	4 ecoregions	3 ecoregions	2 ecoregions	1 ecoregion	Restricted to only the descriptions	5	5	5
4	Ecological life zones	9 ecological life zones	8–6 ecological life zones	5–3 ecological life zones	2–1 ecological life zones	Restricted to only the descriptions	5	5	5
6	Adaptability to perturbed hábitats	Extremely adaptable (found in urban areas)	Adaptable (found in suburban areas or hábitats completely modified by pastures, grass-lands)	Just adaptable (found in natural hábitats with some degree of intervention)	Not adaptable (hábitats are strictly with little or no degree of perturbed)	Unknown	10	15	15
7	Rarity	Introduced	Abundant	Common	Frequent	Rare	20	20	20
8	Publications	More than 10 publications	8–10 publications	4–7 publications	2–3 publications	0–1 publications	10	10	10
9	Mortality in roads and hunting	Never found dead	<10% of the species found dead	10–20%	>20%	Unknown	Not applicable	10	Not applicable
10	Present in Protected Areas	More than three protected areas	3 protected areas	1 protected area	2 protected areas	None	15	10	15



Pristimantis achatinus



Pristimantis palmeri



Anolis maculiventris



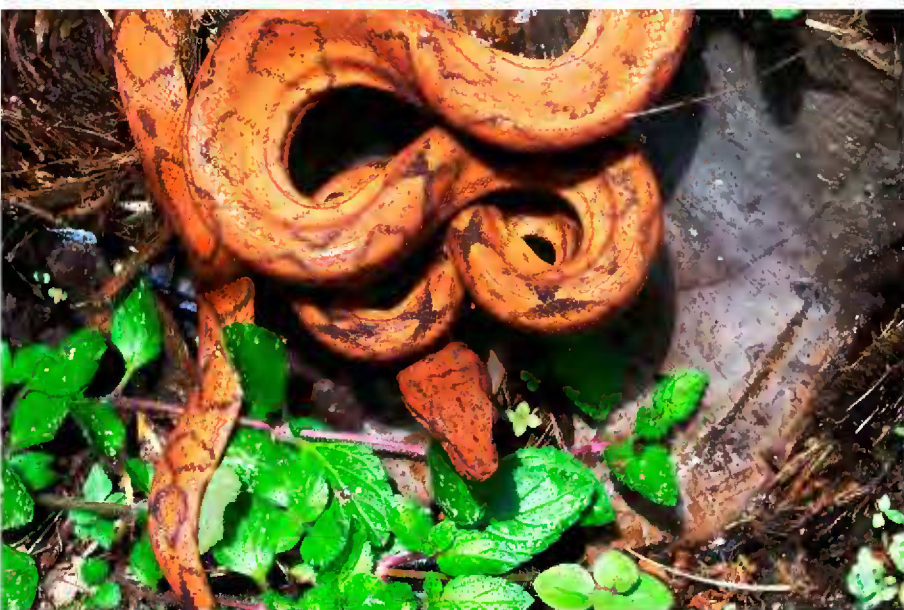
Anolis chocorum



Bothrops asper



Clelia clelia



Corallus annulata



Dendrophidion bivittatus